

2003 0484
IGSL

1994 UPDATE
OF
CITY OF PORTERVILLE
STORM DRAIN MASTER PLAN

OCTOBER, 1994

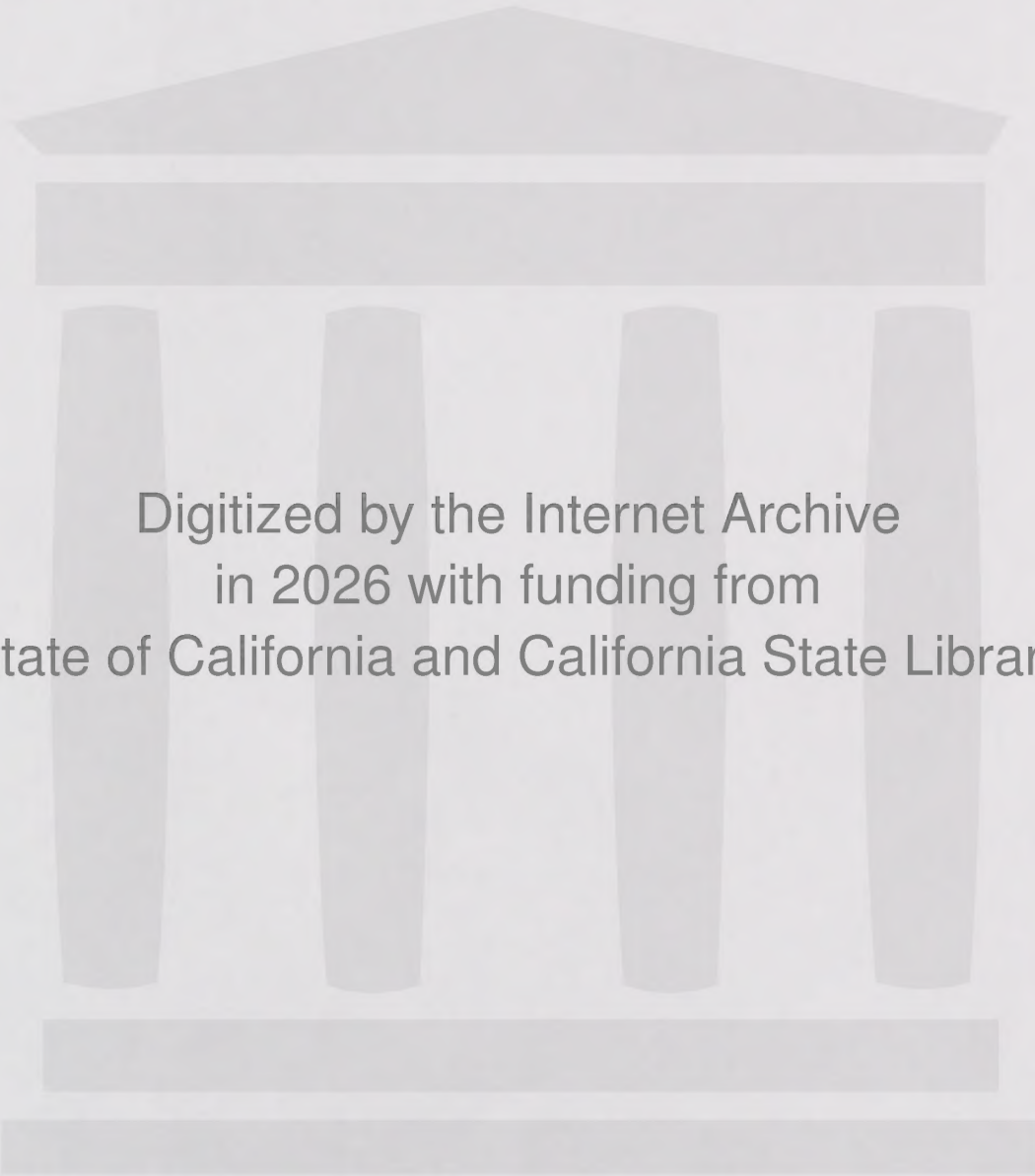
INSTITUTE OF GOVERNMENTAL
STUDIES LIBRARY

SEP 4 2003

UNIVERSITY OF CALIFORNIA

REPRO/COPIES	01-801	\$10.00
SALES TAX	01-205	<u>0.70</u>
TOTAL		\$10.70

CHARLES W. ROBERTS, CONSULTING CIVIL ENGINEER, INC.
342-A NORTH SECOND STREET
PORTERVILLE, CA 93257
784-6326 (FAX) 784-6339



Digitized by the Internet Archive
in 2026 with funding from
State of California and California State Library

<https://archive.org/details/C124926591>

1994 UPDATE
OF
CITY OF PORTERVILLE
STORM DRAIN MASTER PLAN

OCTOBER, 1994

CHARLES W. ROBERTS, CONSULTING CIVIL ENGINEER, INC.
342-A NORTH SECOND STREET
PORTERVILLE, CA 93257
784-6326 (FAX) 784-6339

TABLE OF CONTENTS
1994 UPDATE
CITY OF PORTERVILLE
STORM DRAIN MASTER PLAN

1. INTRODUCTION	1
1.1 Purpose of the Study	1
1.2 Authorization	1
1.3 Methodology and Scope	1
1.4 Acknowledgments	3
2. HYDROLOGIC CHARACTERISTICS, STUDY CRITERIA AND DRAINAGE SYSTEM ANALYSIS	5
2.1 Hydrology	5
2.2 Precipitation	5
2.3 Rational Formula	5
2.4 Soil Conservation Service (SCS) Methodology	6
2.5 Storm Frequency	7
2.6 Intensity	9
2.7 Time of Concentration	11
2.8 Soils and Soil Permeability	11
2.9 Government Regulations and storm water disposal	11
2.10 Groundwater	12
2.11 Storm Water Discharge	12
2.12 Drainage System Analysis	19
3. COST ESTIMATES	21
3.1 Purpose	21
3.2 Developer Fees	21
3.3 Construction Costs	23
3.4 Fee Calculation	23
4. CONCLUSIONS	25
4.1 Conclusions	25
5. RECOMMENDATIONS	27

TABLE OF CONTENTS

1994 UPDATE
CITY OF PORTERVILLE
STORM DRAIN MASTER PLAN

FIGURES

- A. STORM DRAIN MASTER PLAN - 1990 THRU 2010
PRESENT AND PROJECTED DRAINAGE SYSTEMS
(APPENDIX A)
- B. CITY OF PORTERVILLE LAND USE AND
CIRCULATION ELEMENT MAP
(APPENDIX A)
- C. PORTERVILLE AREA TOPOGRAPHIC MAP,
INCLUDING SCS HYDROLOGIC CLASSIFICATIONS
(APPENDIX A)
- D. STORM DRAIN MASTER PLAN - HYDROLOGICAL MODELING BASE MAP WITH
PROPOSED FACILITIES
(APPENDIX A)

TABLES

1.1	CITY OF PORTERVILLE, GENERAL PLAN LAND USE DESIGNATIONS	2
2.1	RUNOFF COEFFICIENTS	6
2.2	RUNOFF CURVE NUMBERS.	8
2.3	PRECIPITATION DEPTH - DURATION - FREQUENCY TABLE SUCCESS DAM - SHORT DURATIONS	10
2.4	PRECIPITATION DEPTH - DURATION - FREQUENCY TABLE PORTERVILLE - LONG DURATIONS.	10

1994 UPDATE
CITY OF PORTERVILLE
STORM DRAIN MASTER PLAN

TABLE OF CONTENTS
(CONTINUED)

APPENDIX

- A
 - A. STORM DRAIN MASTER PLAN - 1990 THRU 2010
PRESENT AND PROJECTED DRAINAGE SYSTEMS
(APPENDIX A)
 - B. CITY OF PORTERVILLE LAND USE AND
CIRCULATION ELEMENT MAP
(APPENDIX A)
 - C. PORTERVILLE AREA TOPOGRAPHIC MAP,
INCLUDING SCS HYDROLOGIC CLASSIFICATIONS
(APPENDIX A)
 - D. STORM DRAIN MASTER PLAN - HYDROLOGICAL MODELING BASE MAP
WITH PROPOSED FACILITIES
(APPENDIX A)
- B LETTERS AND MEMORANDUMS
- C CONSTRUCTION COSTS AND FEES
- D ORDINANCE 1440
- E RESOLUTION 95-90

1. INTRODUCTION

1.1 Purpose of the Study.

The City of Porterville, in continuing to recognize the need for orderly and fact-based planning, has contracted for the update of the City's "Storm Drain Master Plan" which was submitted to the City in 1990. To plan for future expansion of the City's storm drainage systems, current information and rational projections are provided in this update regarding peak and accumulated storm water runoffs for agricultural, domestic, commercial, industrial, institutional, and public areas. An evaluation is provided regarding the status of the existing storm water collection system, detention system and discharge facilities. Mathematical modeling of the storm drainage was carried out to identify the necessary upgrading of existing storm drainage facilities or the construction of new facilities. Using this information, existing deficient facilities are identified and corresponding conclusions are presented which set forth the recommended prudent actions to provide sound fiscal and well-managed storm drainage for the City's future needs.

1.2 Authorization.

The Porterville City Council, acting to secure the information necessary to insure the continued provision for the City of an adequate storm drainage system, entered into an agreement with Charles W. Roberts, Consulting Civil Engineer of Porterville on February 2, 1994, for the update of the "Storm Drain Master Plan", dated 1989.

1.3 Methodology and Scope.

This master plan study update describes the storm drainage facilities (storm drains, storage reservoirs, and discharge locations) required to provide an adequate storm water drainage system for the City as it exists currently (Spring, 1994) as well as for the tentative areas to be developed through the year 2010. Figure A, Storm Drain Master Plan - 1990 thru 2010 (depicted on two sheets in Appendix A) shows the present and projected drainage system. Information regarding land use and future development was identified by the City Planning Division staff on the "City of Porterville Land Use and Circulation Element Map" 20-year plan

and provided to Charles W. Roberts, Consulting Civil Engineer for this study has been identified on Figure B in Appendix A. Where possible, in order to better facilitate a smooth transition and to simplify comparison of information, the organization of this Master Plan study parallels the 1981 and 1989 reports.

For purposes of this study a mnemonic code designation has been assigned to each land use category. A list of land use definitions and their related codes is shown in Table 1.1

TABLE 1.1
CITY OF PORTERVILLE
GENERAL PLAN LAND USE DESIGNATIONS

MA	-	INDUSTRIAL	-	LIGHT
MB	-	INDUSTRIAL	-	MEDIUM
MC	-	INDUSTRIAL	-	HEAVY
MD	-	INDUSTRIAL	-	HEAVY (SPECIAL)
CH	-	HIGHWAY COMMERCIAL		
CV	-	HEAVY COMMERCIAL		
CG	-	GENERAL COMMERCIAL		
CN	-	NEIGHBORHOOD COMMERCIAL		
CO	-	PROFESSIONAL OFFICE		
RH	-	HIGH DENSITY RESIDENTIAL		
RM	-	MEDIUM DENSITY RESIDENTIAL		
RL	-	LOW DENSITY RESIDENTIAL/FLATLAND		
RS	-	LOW DENSITY RESIDENTIAL/HILLSIDE		
RR	-	RURAL DENSITY RESIDENTIAL		
PQ	-	PUBLIC AND QUASI-PUBLIC		
PR	-	RECREATION AND OPEN SPACE		
PS	-	SCHOOLS		
OS	-	RANGE LAND		
OR	-	CULTIVATED LAND		
APT	-	AIRPORT		

Since the submittal of the 1989 Master plan, the City has expanded its urban development boundaries to a modest extent, continued with the development of the Linda Vista, Enterprise and Airport primary industrial areas, as well as the furtherance of development plans for the Hillcrest, west of Westwood, and East Porterville primary residential areas.

Conclusions and recommendations regarding physical storm drainage facilities presented in this study are based primarily on computer-based mathematical modeling of the City's storm drainage system. "WaterWorks" V. 2.9 is the computer software (programs) adopted by the City and used to simulate storm events and the resulting runoff within the study area. This

software was obtained from Engenious Systems, Inc., a Seattle, Washington firm. The software uses the U.S. Soil Conservation Service (SCS) curvilinear unit hydrograph method in hydrological modeling. Because specific local rainfall distribution data was available for use with the SCS method, it was used to model the Porterville Study Area.

The computer hardware required to operate the storm drainage analysis software must be, at minimum an SX386 with a hard disk. A color monitor is advised.

1.4

Acknowledgments:

As in the preparation of the 1989 Report, the cooperation provided by members of the City of Porterville staff was invaluable in the preparation of this report. The staff of Charles W. Roberts, Consulting Civil Engineer, at the risk of not naming numerous City staff members who provided exceptional effort in development of needed information, extends thanks to the City of Porterville.

In addition to City staff, the following State and Federal Agencies, Irrigation Districts and Water Companies were of assistance with the 1989 report:

John Pike, Success Dam Park Manager, U.S. Corps of Engineers;

Steve Cameron, U.S.D.A. Soil Conservation Service;

Charles Davis, Chief, Engineering staff, Davis, CA;

Ed Schmit, State Hydrologist;

Samuel Brandon, Mel Schwartz, and Raymond E. Barsch of the State of California Department of Water Resources;

David L. Hoffman, Manager, Porterville Irrigation District;

Robert Gauger, Manager, Pioneer Water Company;

Rodger Robb, Manager, Lower Tule River Irrigation District;

Thomas O. Barnwell, Jr., U.S. EPA.; and

Tulare County Department of Public Works staff.

For this updated report, the following individuals were of assistance:

R. L. Schafer, Tule River Association

Rodger Robb, Manager, Lower Tule River Irrigation District

2. HYDROLOGIC CHARACTERISTICS, STUDY CRITERIA AND DRAINAGE SYSTEM ANALYSIS

2.1 Hydrology.

Hydrology is the scientific study of the properties, distribution and effects of water on the earth's surface, in the soil and underlying rocks, and in the atmosphere. In its application to the problems of storm drainage, hydrology is the study of the relationship between rainfall and runoff.

In this master plan, the relationship between runoff and peak flow is dealt with by use of both the rational formula and the procedures outlined in the Soil Conservation Service (SCS) National Engineering Handbook, Section 4, Hydrology. The rational formula is applicable to the design of the conveyance of storm water for individual developments of an area of 40 acres or less. In larger areas and in the design of major storm sewers, storage reservoirs and outfalls, the more scientific SCS methods are warranted.

2.2 Precipitation.

Precipitation is a more general term than rainfall and includes snow, sleet and hail. In places where snow, sleet and hail rarely occur, as in Porterville, the terms precipitation and rainfall are frequently used interchangeably.

2.3 Rational Formula.

The rational formula was not used in this study but may be used for determining the peak flows of storm water in individual developments of less than 40 acres for the purpose of designing storm drainage facilities.

The rational formula is as follows:

where; $Q = CiA$
 $Q =$ peak rate of flow, in cubic feet per second (cfs)
 $C =$ coefficient of runoff
 $i =$ intensity of rainfall in inches per hour during the time of concentration
 $A =$ area in acres contributing to the flow; the drainage area of the basin.

The rational formula method utilizes a runoff coefficient, C. A runoff coefficient is the proportion of the rain that can be accounted for as runoff. It is expressed as a decimal fraction and is always less than 1.00. The coefficient has been found to vary directly as a function of the extent of impervious surfaces in the area under consideration. Since the extent of impervious surfaces in an area is related to the land use within that area, the coefficient is a function of the land use.

In this study the runoff coefficients applicable to various types of land use are shown in Table 2.1.

TABLE 2.1
RUNOFF COEFFICIENTS

<u>LAND USE</u>	<u>RUNOFF COEFFICIENTS</u>
Industrial and Commercial	0.8
High Density Residential (R-2 & R-3)	0.6
Medium Density Residential (R-1, 6,000 s.f., min.)	0.4
Low Density Residential (R-1, 12,500 s.f., min.)	0.3
Open Space, Slopes Less Than 1%	0.1
Open Space, Slopes 1% to 10%	0.2
Open Space, Slopes More than 10%	0.3
Orchard	0.5

2.4 Soil Conservation Service (SCS) Methodology.

Procedures outlined in SCS National Engineering Handbook, Section 4, Hydrology (NEH-4), were used for determining volumes, peak rates, and hydrographs of runoff through and from the study area utilizing the "Waterworks" software. The volume of runoff from urbanized areas depends more on the percentage of impervious area than on any other watershed constants. Changes in the time-area relationship, the lag time for the peak flow to appear at the lowest point on the boundary of the drainage area after precipitation commences, are estimated by hydraulic analysis of overland velocities and storage. Changes in channel routing are estimated by hydraulic analysis of channel velocities and storage.

The soil-cover complex which is shown on Figure C, "Porterville Area Topographic Map, Including SCS Hydrologic Classifications" in Appendix A, and the associated runoff curve number (CN) outlined in NEH-4 are used to measure the runoff volumes. Runoff curve

The rational formula method utilizes a runoff coefficient, C. A runoff coefficient is the proportion of the rain that can be accounted for as runoff. It is expressed as a decimal fraction and is always less than 1.00. The coefficient has been found to vary directly as a function of the extent of impervious surfaces in the area under consideration. Since the extent of impervious surfaces in an area is related to the land use within that area, the coefficient is a function of the land use.

In this study the runoff coefficients applicable to various types of land use are shown in Table 2.1.

TABLE 2.1
RUNOFF COEFFICIENTS

<u>LAND USE</u>	<u>RUNOFF COEFFICIENTS</u>
Industrial and Commercial	0.8
High Density Residential (R-2 & R-3)	0.6
Medium Density Residential (R-1, 6,000 s.f., min.)	0.4
Low Density Residential (R-1, 12,500 s.f., min.)	0.3
Open Space, Slopes Less Than 1%	0.1
Open Space, Slopes 1% to 10%	0.2
Open Space, Slopes More than 10%	0.3
Orchard	0.5

2.4 Soil Conservation Service (SCS) Methodology.

Procedures outlined in SCS National Engineering Handbook, Section 4, Hydrology (NEH-4), were used for determining volumes, peak rates, and hydrographs of runoff through and from the study area utilizing the "Waterworks" software. The volume of runoff from urbanized areas depends more on the percentage of impervious area than on any other watershed constants. Changes in the time-area relationship, the lag time for the peak flow to appear at the lowest point on the boundary of the drainage area after precipitation commences, are estimated by hydraulic analysis of overland velocities and storage. Changes in channel routing are estimated by hydraulic analysis of channel velocities and storage.

The soil-cover complex which is shown on Figure C, "Porterville Area Topographic Map, Including SCS Hydrologic Classifications" in Appendix A, and the associated runoff curve number (CN) outlined in NEH-4 are used to measure the runoff volumes. Runoff curve

numbers for land use and treatment practices for hydrologic soil groups were developed from daily rainfall records for small agricultural watersheds. By employing land use patterns found in an urban area and accounting for impervious areas, a composite weighted CN representing runoff potential from each watershed has been determined. The CNs used in this study are set forth in Table 2.2.

Methods of determining peak rates of runoff used in the software are outlined in Chapter 16 of NEH-4. Examples 1 and 2 in Chapter 16 of NEH-4 show the development of the total hydrograph. Hydrographs are used when 1.) storm flows must be routed, or 2.) storm flow rates as a function of time for tributaries must be analyzed.

2.5 Storm Frequency.

For reasons of economy, storm drain systems may be designed so that their capacity will be exceeded from time to time resulting generally in overland flow through the street system with little or no resulting damage. This event may cause short term inconvenience for some residents and businesses, but this inconvenience is tolerable to most people in view of the very considerable cost savings. The expected frequency with which the design capacity is exceeded is expressed in years; for example, a system may be designed for the maximum storm to be expected once every two years. The expected storm frequency expressed in years is termed the return period. In this example, the return period is two years, which means that in a 50-year interval the storm will be equalled or exceeded 25 times. Return period in this master plan study is expressed in the form of 1/2 year; i.e., once every two years.

The degree of protection required for an urban area depends on the type of development and the acceptable level of inconvenience. This study utilized the following return period for sizing storm water collection structures, channels, pipes and reservoirs:

<u>TYPE OF STRUCTURE</u>	<u>STORM RETURN FREQUENCY</u>
All storage reservoirs	1/100 years
Commercial and Industrial Areas Collection Structures, Channels and Pipes	1/10 years
All Other Uses	1/2 years

TABLE 2.2

Runoff curve numbers for selected agricultural, suburban, and urban land use. (Antecedent moisture condition II and $I_a = 0.25$)

LAND USE DESIGNATION	DESCRIPTION	HYDROLOGIC SOIL GROUP		
		B	C	D
	CULTIVATED LAND:			
OR	WITHOUT CONSERVATION TREATMENT	81	88	91
	PASTURE OR RANGE LAND:			
OS	POOR CONDITION	79	86	89
	GOOD CONDITION	61	74	80
	OPEN SPACES, LAWNS, PARKS GOLF COURSES, CEMETERIES, ETC:			
PQ, PR	GOOD CONDITION: GRASS COVER ON 75% OR MORE	61	74	80
PS	FAIR CONDITION: GRASS COVER ON 50% TO 75%	69	79	84
ALL C	COMMERCIAL AND BUSINESS AREAS (85% IMPERVIOUS)	92	94	95
ALL M, AIRPORT	INDUSTRIAL DISTRICTS (72% IMPERVIOUS)	88	91	93
	RESIDENTIAL:			
RH, RM	1/8 ACRE OR LESS 65% IMPERVIOUS	85	90	92
RL	1/4 ACRE 38% IMPERVIOUS	75	83	87
RS	1/2 ACRE 25% IMPERVIOUS	70	80	85
RR	1 ACRE 20% IMPERVIOUS	68	79	84
	PAVED STREETS, ROADS, HIGHWAYS AND PARKING, AREAS	98	98	98

In the design of systems where other than the 1/100 year return period is utilized as criteria, care must be given to not create flooding to a point where buildings are inundated during the 1/100 year return period.

Storage reservoirs with controlled outlets must be designed with the outlet capacity as a determining factor in sizing the reservoir. The ten day, 100 year frequency storm is one criterion for the design of such reservoir. However, the shorter periods may prove to be critical, depending on the size of the outlet; shorter period storms of a similar frequency can be critical if they have higher rates of rainfall.

2.6 Intensity.

The intensity of the rain that will produce the runoff for which the drainage system is designed must be determined from a study of the weather records in the vicinity.

In California, the labor of making such a study has recently been greatly reduced, or almost eliminated, by the compilations and analyses of the California State Department of Water Resources. Their results are presented in Bulletin No. 195, in three volumes, dated October 1976. The station records which are of greatest interest for the present purpose are those for Porterville, which has precipitation records for more than 100 years, and Success Dam, where the U.S. Army Corps of Engineers maintains a recording instrument providing data on short duration rainfall intensities. The availability of these records assures that insofar as rainfall intensity, duration and frequency are concerned, the present studies are based on the most reliable and up-to-date information.

The data in Bulletin No. 195 is expressed in terms of the maximum precipitation (in inches) for the indicated duration. This data is easily converted to rainfall intensities (in inches per hour) by multiplying the values given in Table 2.3 by the appropriate factor.

TABLE 2.3

PRECIPITATION DEPTH - DURATION - FREQUENCY TABLE

Maximum Precipitation (Inches)
for the Indicated Duration
Success Dam - Short Durations

<u>DURATION</u>	<u>RETURN PERIOD IN YEARS</u>		
	2	5	10
15 minutes	.18	.27	.32
30 minutes	.26	.39	.47
1 hour	.35	.52	.63
2 hours	.52	.77	.93
3 hours	.63	.93	1.13

The Porterville precipitation station records are also of great value, particularly in the sizing of detention basins where storm water may continue to accumulate for many days. Basic data from Bulletin No. 195 for Porterville are tabulated in Table 2.4.

TABLE 2.4

PRECIPITATION DEPTH - DURATION - FREQUENCY TABLE

Maximum Precipitation (Inches)
for the Indicated Duration
Porterville - Long Durations

<u>DURATION</u>	<u>RETURN PERIOD IN YEARS</u>				
	2	5	10	50	100
1 day	1.31	1.81	2.14	2.86	3.15
2 days	1.64	2.33	2.80	3.81	4.23
3 days	1.79	2.57	3.10	4.26	4.73
5 days	2.0	2.90	3.52	4.84	5.39
10 days	2.48	3.56	4.28	5.82	6.45

The reason that both the Success Dam and the Porterville stations are used is that there are no records of short duration intensities at Porterville, which necessitates using the Success Dam record for that part. On the other hand, the records at Porterville are considered more reliable for the longer durations because of the longer record - 100 years as compared with only

25 years for Success Dam. The mean annual precipitation at the two stations is very nearly the same varying by an average of only 1.3% during 1960 through 1974, and the stations are only about 3 miles apart. Therefore, for practical purposes, both stations are considered representative of the study area.

2.7 Time of Concentration.

This is the length of time required for precipitation to travel from the point of impact where it strikes a roof or the ground to the point where the design flow is to be calculated.

Special attention is given to the computation of time of concentration and travel time. This is done through the "Waterworks" software. Velocities of flow through culverts and channels are computed using hydraulic procedures that take into consideration the characteristics of the flow paths.

2.8 Soils and Soil Permeability.

Soils in the Porterville area are quite variable in their permeability; that is, the ability to absorb or percolate rainfall or surface water may vary considerably from place to place. This characteristic of soils is a factor in the selection of storage reservoir sites. The United States Department of Agriculture, Soil Conservation Service, has made extensive studies of the soils and their permeability in the Porterville area and this information has been identified on Figure C in Appendix A.

Prior to acquiring a site for a storage reservoir, which is dependent on percolation for storm water disposal, a specific investigation should be made of the proposed storage reservoir soils to assure that they will provide adequate percolation.

2.9 Government Regulations and storm water disposal.

At present, 40 Code of Federal Regulations (CFR) Parts 122, 123 & 124, establishes National Pollutant Discharge Elimination System (NPDES) permit application requirements for storm water discharges from municipalities with separate storm water systems serving populations over 100,000. The magnitude and complexity of administering the current regulations is considerable. The most probable scenario is that it will be several years before municipalities the size of Porterville will be included in this permit process.

Best Management Practices (BMP) of NPDES recognize that, "Where conditions are suitable infiltration systems may be the preferred choice because storm water is placed into the ground thereby reducing excess runoff and providing groundwater recharge." Communities and CalTrans have used infiltration systems in the Central Valley for more than two decades without significant problems.

Beneath the Porterville Urban Development Area lies a body of groundwater which is the major source of the municipal and domestic water supply in the area, and provides a part of the area's irrigation requirements as well. This resource is obviously important, is generally of good quality, and should be protected against pollution.

The groundwater which underlies the area generally lies in two zones. One zone is relatively shallow (less than 50 feet) and is perched on the second zone which is deeper and is semi-confined. All new municipal wells are served by the deeper zone. Some of the older City wells and most private wells are served by the shallower zone.

Percolation of storm water from detention basins could give rise to groundwater pollution, especially in older City wells and shallow private wells. No evidence of such a problem exists at the present time. The possibility of contaminating nearby groundwater supplies should be given consideration prior to acquiring sites for storage reservoirs.

With storm water management it should be recognized, at the outset, that suggested NPDES BMP emphasize source control as a priority. It should also be noted that a major concern in the maintenance of water quality is the small frequent storm run-off as being the most potentially polluting.

There are two methods for storm water discharge: existing conveyances, which are either natural or man-made channels; and, storage reservoirs from which the water evaporates or percolates into the groundwater.

In the Porterville area there are two natural channels for storm water discharge, the Tule River and Porter Slough. Six irrigation ditches and eight major storage reservoirs exist.

at present.

TULE RIVER. The channel of the river, as it passes through the Porterville area, is a floodway for the waters of the river, with a designated capacity of 15,000 cfs. Portions of the City's existing storm drain system use the river channel for discharge of storm water. It is expected that such use will continue, and that additional areas naturally draining to the river will also utilize its capacity. The existing points of discharge are:

- Crestview Street;
- West of the Santa Fe Railroad;
- Main Street North and South of the River (including proposed new);
- Springville Drive, approximately 900 feet east of Jaye Street;
- Jaye Street;
- South of Villa Street;
- Indiana (existing and proposed new);
- South of Cloverleaf Street;
- South of Prospect Street (proposed new, north and south sides);
- South of Beverly Street (proposed new);
- South of Lotas (proposed new);
- Newcomb Street (proposed new);
- Westwood Street (proposed new); and
- Olive Avenue (existing and proposed new).

Success Dam, operated by the U. S. Army Corps of Engineers, was designed to control flooding of the Tule River. For the purpose of the present study, the degree of control now provided is regarded as satisfactory since it controlled what was deemed as a 1/100 year Tule River flood during the winter of 1969. The channel of the river is considered to be suitable for the discharge of storm waters generated in or near the City, when these storm waters can be economically discharged to the river.

PORTER SLOUGH. This is a natural secondary channel of the Tule River which has been designated as a floodway of the Tule River (Flood Boundary and Floodway Map, Tulare County, California, Panel 9 of 10, September 29, 1986, Federal Emergency Management Agency (FEMA). The Porter Slough originates on the river some four miles upstream from the City, flows through the Urban Development Area and discharges back into the river again some 17 miles below it. Its designated capacity as a floodway is 450 cubic feet per second. It is used by districts forming the Tule River Association as a conservation facility for groundwater recharge and as a conveyance facility for direct irrigation. It also serves as a channel for the discharge.

of drainage of storm waters collected (points of discharge listed below) in the existing facilities of the City of Porterville and for storm waters discharged from the hillside watersheds above the City, which are natural tributaries of Porter Slough.

Page Street and Success Drive;
Rocky Hill Street;
Holcomb Street;
Connor Street;
Hillcrest Street;
Crestview Street (Tr07);
Leggett Street (Tr13) and south;
Approximately 400 feet east of Park Street;
Park Street;
400 feet east of Plano Street;
Plano Street;
400 feet southeast of Olive Avenue;
Bypass FM. Pioneer Ditch;
Alley between Third and Fourth Streets;
Third Street;
Alley between Second and Third Streets;
Alley between Main and Second Streets;
Main Street;
Alley between "D" and Hockett Streets;
"D" Street;
"H" Street;
250 feet west of Kessing Street;
200 feet west of Jaye Street;
South of Pearson Street;
Villa Street;
Cottage Street (Morton system);
Indiana Street;
Capitola Place;
Marietta Manor;
Prospect Street;
Near Wastewater Treatment Plant;
Westside Street;
Lindale Street;
Newcomb Street, north and south of slough;
Salisbury Street, north and south of slough;
Belmont Street;
Verdugo Street;
Walch Street;
Matthew Street;
Balmoral Street; and
Westwood Street.

The City of Porterville has a gate or turnout on Porter Slough about 1-1/4 miles downstream from the diversion point on the Tule River. Based upon the 1981 Storm Drain Master Plan, it is assumed that this gate can be closed by the City to reduce the threat of flooding. If this is done, any water flowing in the slough would return to the river. This, in effect, would make the full capacity of the slough available to carry away storm water.

The Porter Slough, as stated above, has a designated-capacity of 450 cfs; however, due to restrictions caused by undersized culverts and inadequate maintenance of the open channel, this flow rate is more than the capacity of the present channel. Its current capacity is probably 300 cfs according to Mr. Rodger Robb.

Despite the important functions performed by Porter Slough, no agency has been designated to be responsible for its maintenance. Yet, the City, County, State, Tule River Association, Tulare Lake landowners and abutting landowners each have an interest in its operation. A cooperative effort clearly should be organized at an early date for the maintenance and operation of Porter Slough.

For the purposes of this report, it is assumed that the above described program will be carried out and that by enlargement of the culverts, dredging of the open channel and proper maintenance, the full designated floodway capacity of 450 cfs will be restored to Porter Slough and made available for its designated purposes including the drainage of storm waters.

At times it will be necessary to use Porter Slough to discharge a portion of the flood waters of the Tule River. This, however, is normally expected to cause little interference with use of the Slough for discharge of Porterville storm waters since a Tule River flood peak will arrive at the Porter Slough diversion structure after local storm water flows have subsided due to the delaying effects of Success Reservoir.

IRRIGATION DITCHES. Several irrigation ditches or conduits flow through the City or its urban area. These are designated as:

1. Pioneer Ditch
2. Porter Slough Ditch
3. Hubbs-Minor Ditch

4. Poplar Ditch
5. Campbell-Moreland Ditch
6. Vandalia Ditch

Contact was made with the following Irrigation Districts and Companies, as part of the 1989 Master Plan Study. The response then to the availability of each system for future storm water discharge was as follows:

<u>Company and Facility</u>	<u>Contact Person</u>	<u>Response</u>
Pioneer Water Co. Pioneer Ditch and Pipelines	Robert Gauger	would probably allow use of the ditch and pipeline facilities provided the available capacity is not exceeded and the quality of the water being discharged is not detrimental.
Porterville Irrigation District Hubbs-Minor Ditch Porter Slough Ditch	David Hoffman	Will not allow any additional discharge of storm water into water into their facilities.
Lower Tule River Irrigation District and Poplar Ditch	Rodger Robb	Will accept regulated storm water discharged provided ditch capacity is not exceeded and the quality of the water being discharged is not detrimental.

For this update, additional contact was made with Roger Robb who was of much the same opinion as before. Mr. Robb indicated he would be interested in sharing with the City the use of his Poplar Ditch in the Porterville area as a conveyance for storm waters provided the quality were not degraded. He seemed to feel the same would be true for the Porter Slough and Tule River also.

From his perspective, storm waters reaching any of the conveyances through town could be transported through those conveyances if there were locations downstream capable of handling the volumes thus delivered. The primary objective would be to regulate the peaks through the use of the storages.

He felt the ideal situation would be to have the manipulation of the waters through town all under the control of one entity. The City would enter into an overall master agreement with the District. The City could be involved in tailoring the agreement to each facility or situation. A joint effort of the City and the District would install, improve, expand and maintain all the structures and facilities.

Mr. R. L. Schafer of the Tule River Association was contacted pursuant to this update. He appears to be willing to accept runoff into the Tule River and the Porter Slough as it presently exists with the stipulation that additional runoff would have to be stored and percolated or possibly allowed to drain into the channels after the storm has subsided.

Appendix B contains more detailed information in the form of letters and memorandums regarding the above contacts.

All were concerned that the discharged storm water not contaminate their irrigation water or the properties of their downstream water users.

In some places, these ditches serve as outlets for portions of the study area, and it is assumed that this use of these ditches will continue into the future.

With the increased urbanization of the area, portions of several of the ditches have been replaced by underground conduits. Although this allows the irrigation use of the ditches to continue, the function of storm water disposal may be lost because no provision was made for it when the conduits were built. Pioneer Ditch is an example of this conversion. When originally built, and for many years thereafter, the open ditch served to carry away runoff from portions of Lewis Hill, Rocky Hill, and other nearby areas. Now that miles of the ditch have been replaced by underground pipe, the Pioneer Ditch for the most part can no longer adequately serve as a storm water drain.

The right to use a ditch as a storm drain is a valuable water right which the City has established over the years. Through continued disuse, this right will be lost. Only if the City continues to exercise its practice of using irrigation ditches for storm water use can it maintain its prescriptive rights to this use. If possible when land is being annexed to the City which has appurtenant ditch rights, these rights should be acquired by the City. Acquisition of ditch

rights would help to perpetuate the use of the various ditches for storm water disposal and would also provide a source of water for groundwater recharge during the summer months.

Similar problems have emerged or will become evident with other ditches as urbanization continues. Timely cooperative action between the city and the various irrigation interests should result in an agreement to protect all interests and to preserve the historic multi-purpose function of the ditches without costly litigation.

STORAGE RESERVOIRS. In some drainage systems where there is no nearby, or adequate, channel for storm water disposal, the storage reservoir becomes the only alternative to a lengthy and costly outfall line. In addition to being more economical, such reservoirs can also provide opportunities for water conservation by recharge of the groundwater basin and for parks and recreation. On the other hand, there is danger that the reservoir may be unsightly or otherwise detrimental to the environment if adequate care is not provided. For these reasons, the selection and siting of a storage reservoir must be given careful, detailed study.

Storage reservoirs consist of two types: detention reservoirs are designed to detain storm water for a period of time until capacity of downstream storm drains become available for discharge after the subsidence of the storm; and, retention reservoirs which are intended for the ultimate disposal of storm waters through percolation and evaporation only.

If possible, the storage reservoir sites should be located in areas with relatively permeable soils. The reservoirs can be visually displeasing unless properly landscaped and adequately maintained. In fact, the City of Porterville presently owns and operates two such reservoirs, Zalud Park and Hayes Field, both having dual functions as detention reservoirs and as parks. This dual function is possible since there is seldom conflict between the fair weather park use and the stormy weather detention use. Sodding the bottom of a detention reservoir so that it may be used as a park, will reduce the percolation rate of stored storm water.

Presented in Appendix C, Page 4, is a compilation of Porterville reservoirs and their detention/retention capacities for the land 10 day/100 year storm events. Percolation tests have been conducted at many of the sites and conservative values have been assumed for those not yet tested. One third (1/3) the actual percolation rate has been used to calculate an effective

percolation rate. The final results are indicated in the last column, the volume of reservoir that either must be provided to contain the 10 day/100 year storm or the volume that must be drained from the reservoir during the 10 days of the event.

2.12 Drainage System Analysis.

By making use of the "Waterworks" software, which incorporates the SCS methodology with our computer system, computer modeling was done. The resulting simulated flows and volumes of flows were then transferred into a computerized spreadsheet which produced estimated pipe sizes and storage reservoir sizes. For the analysis of pipe requirements, a Mannings friction n value of 0.013 was used. The computerized spreadsheet then applied the construction cost estimates set forth in Appendix C to the estimated quantities to arrive at estimated construction costs for the system. This information was then spread to the different land uses on the basis of land area which was weighted proportional to rational runoff coefficients. The end results of the foregoing analysis is:

1. Pipe flows for future pipe sizing;
2. Storage reservoir volumes for future reservoir sizing;
3. System cost estimates; and
4. Proposed acreage fees.

It should be noted that the SCS methodology was used to model the City's system but was not used to apportion the cost to the different land uses. The rational runoff method was used to apportion cost. This was done to simplify the administering of the collection of fees. If the SCS method was used to spread costs several other variables would have entered into the formula, such as:

1. The slope of the land;
2. The vegetative cover of the land;
3. The type of soils; and
4. The shape of the water shed.

To administer the collection of fees taking into account these variables would be extremely cumbersome and would more than likely result in additional administrative costs. The additional administrative costs would undoubtedly exceed any of the savings which could possibly be enjoyed by some if the SCS methodology were used.

3. COST ESTIMATES

3.1 Purpose.

As in the 1989 Storm Drain Master Plan, it must be recognized that a master plan for storm water facilities can only be implemented if the planned improvements can be paid for. An important part of the planning process is the establishment of methods by which the cost of the facilities can be determined. Funding mechanisms are then adopted to finance the construction and operation of facilities equitably among the users.

To repeat the conditions for 1989, the City of Porterville has adopted three primary sources for funding of capital improvements. The first funding source is user fees collected by the City from individual property owners and business concerns. These funds are principally used to operate the system on a daily basis and repair the system as needed. The second funding source is developer fees charged on new development for the construction of additional needed facilities. The third funding source is through the sale of bonds issued by the City and paid off over a period of years from general revenues.

An additional method of financing improvements used in special circumstances when other funding sources are not available is the formation of assessment districts. This method is popular where the area of benefit is closely defined and cannot be equitably spread to other areas of the City. By state law, if fees collected by the City exceed the cost of the capital improvements funded by those fees, they become a tax which must be approved by the voters of the affected area. In newly developing areas, the principal funding method is developer fees. These are discussed in detail in the following section.

3.2 Developer Fees.

Section 66001 of Chapter 5 of Division 1 of Title 7 of the Government Code of California affects the method by which the City handles fees charged in connection with development projects to fund public facilities, such as storm drainage systems.

An important part of the planning process is, therefore, to determine the purpose,

nature, amount, and equitable distribution of the fees that will be assessed to construct storm drainage facilities to the planned level of service. To implement the plan, the City Council of the City of Porterville adopted Ordinance No. 1440 and passed and adopted Resolution 95-90 in August 1990 (Appendix D and E).

In general, when establishing a fee or revising a previously adopted fee, the City must; (1) identify the purpose of the fee, (2) identify the use to which the fee will be put, (3) identify how the fee is related to the type of project proposed, (4) identify the relationship between the need for the public facilities and the type of development project proposed, and (5) justify the amount of the fee as it relates to the cost of the proposed improvements. A discussion of these criteria as they relate to the Storm Drain Master Plan is contained in the following paragraphs.

(1) Purpose of the fee.

Fees collected under the proposed ordinance would be used exclusively to construct and operate storm drainage facilities within the City's planning area over the period of time the master plan is in effect.

(2) Use of the fee.

The fees would be used to improve the existing storm drainage system and extend the system into areas presently not being served.

(3) Relationship between the Use of the fee and the Type of Development.

Clearly, all development proposed for human use or habitation will require some form of storm water collection and disposal. Fees collected under the proposed ordinance will be used to finance such improvements.

(4) Relationship between the Need for the Facility and the Type of Project.

Although this requirement was discussed in (3) above, it should be emphasized that each type of project considered by the City within the planning area will require a funding mechanism and level of service unique to that area. The Master Plan must ensure an equitable distribution of the costs associated with development between existing users and newly developed areas.

(5) Relationship between the Amount of the Fee and the Cost of Development.

The cost of storm drainage system improvements has been calculated for each of the general plan land use areas shown on the Land Use Element Map. The cost is based upon the improvements required for buildout of the system storm drainage collection and outfall lines and structures and storage reservoirs.

3.3 Construction Costs.

In order to estimate the costs associated with the planned improvements, the construction values for materials and labor were derived from current construction industry publications and knowledge of local costs. These costs are set forth in Appendix C. These costs should be adjusted annually based upon the "ENGINEERING NEWS RECORD CONSTRUCTION COST INDEX".

3.4 Fee Calculation.

To establish an equitable fee for all new development, the construction costs for the recommended new facilities were apportioned to the undeveloped areas by zoning classification. These fees were calculated on an impact related basis for the Porterville area and are shown in Appendix C.

These development fees bear a direct relationship to the amount of storm water runoff created by the different land uses and the cost of necessary present and future improvements.

If any of the recommended Capital Improvements are funded through an assessment district, the fee should be recalculated after removing the costs for the improvement from the equation. The benefits in such a situation are limited to the assessment district boundaries and do not accrue to City residents generally.

It should be noted that as a part of the fee collection process the City should establish a separate account for storm drainage facilities and appropriate the funds collected on an annual basis. By State law, funds unused or unencumbered by the City at the end of five years must be returned to the assessee.

The determination of equitable fees for improvements is summarized on the spreadsheet included in Appendix C of the master plan. The adopted ordinance establishing fees is included as Appendix D, and the adopted resolution setting forth the dollar amount of those fees is included as Appendix E. There is a proposed revised, "Exhibit A, STORM DRAINAGE FEES," as adjusted for the current year, based on the Engineering News Record Construction Cost Index (ENRCCI) as prescribed by the Ordinance and Resolution.

4. CONCLUSIONS

4.1 Conclusions.

In this study, we have taken an in-depth look at the present and future needs of the City's storm drainage system. We have analyzed the system from the standpoint of the year 2010 state of growth based on population projections forecast by the Planning Division.

To study the storm drain system, computer modeling was done. Additional restudies of certain areas have been completed. The input and output data from the computer modeling is the property of the City. The models can be used in the future by the City's staff to simulate precise development scenarios which were beyond the scope of this study.

The storm drainage collection and disposal system was designed for a total build-out of the planning area. Only in those areas actually developed will it be necessary to construct the ultimate facilities.

Based upon the projected needs of the system, we have set forth cost estimates for the capital improvements necessary to sustain the system throughout the planning period. Costs have been allocated to undeveloped portions of the planning area.

Prices used to project the capital improvement costs were based upon our best estimate of present costs. These costs were updated using the method stipulated by Ordinance 1440 and Resolution 95-90, the ENRCCI ratio. Prices should be reviewed periodically and the improvement costs updated as required. Capital improvement costs should be allocated based upon the actual cost of the improvement.

The authors of the scope of work for this Master Plan expressed concern that many of the points of discharge proposed by the 1981 and 1989 Master Plans lacked permission for that discharge from the governing agencies involved. The system has been designed to avoid introducing additional storm waters into Hubbs-Minor, Poplar, Campbell-Moreland, and Vandalia Ditches. In this study, we have concentrated on discharging storm water into storage

reservoirs for detention, retention and recharge. This philosophy should serve to reduce the involvement with the agencies so involved.

There are very few new points where storm waters will be introduced to water courses as future development takes place; along Porter Slough at Elderwood Street, at Newcomb from the Veterans' Park reservoir when the capacity of the reservoir for storage is exceeded, and at Indiana, Leggett and Crestview from the north. Pioneer Ditch already accepts storm water at the points where indicated in this study.

5. RECOMMENDATIONS

- 5.1 The most important priority should be the cleaning, repair and maintenance of the Porter Slough. The funds for the task should come from the maintenance budget for the storm drain system.
- 5.2 The diversion structure just west of the Municipal baseball field which controls the flow to Porter Slough should be utilized as necessary to reduce the threat of flooding whenever a storm occurs.
- 5.3 During the winter months, detention reservoirs should be drained on a controlled basis during major storms to allow for adequate storage.
- 5.4 If property being annexed to the City has existing ditch rights, the City should acquire these rights to allow for future storm drainage disposal.
- 5.5 Storm drain reservoirs should be used to recharge groundwater with water obtained through rights from ditch companies.
- 5.6 The City should purchase future storage reservoir sites as soon as it is economically feasible so that when development occurs in an area the City will not be paying increased land costs.
- 5.7 The design of the system is conservative. Additional storm water can be accommodated by the system by surcharging various structures.
- 5.8 The City should spend the money generated by fees in those areas from which the monies are collected whenever practical.
- 5.9 This storm drain master plan does not provide piping capable of conveying 100-year storms to retention-detention reservoirs. All retention-detention reservoirs should be constructed with surface flow channels leading into them capable of conveying 100-year storm excesses from adjoining streets and natural channels.
- 5.10 Anticipated future National Pollutant Discharge Elimination System (NPDES) permit requirements will require the City to test the quality of storm runoff at selected discharge points. If the water quality does not meet standards in effect at that time, the City will have

to make an effort to improve the water quality until it meets standards. Improvement can be brought about by either eliminating the source of contamination or by removing the contaminants prior to discharge. The City would be well advised to follow the recommendations contained in the California Municipal Storm Water Best Management Practices Handbook, where practical, in order to minimize the cost of complying with the anticipated future NPDES requirements.

- 5.11 This plan should be reviewed on an annual basis to determine changes in projected City growth. Appropriate adjustments should be made to projected construction schedules and fee structures to compensate for actual conditions when it does not follow projected growth.
- 5.12 Ordinance 1440 in Appendix D should be reviewed.
- 5.13 Individuals who construct approved new storm drainage facilities in accordance with Government Code 66001 (AB1600) should be reimbursed as set forth in Ordinance 1440.
- 5.14 To encourage groundwater recharge, minimize impact on natural channels, and to help meet NPDES requirements, the City should require developers to provide detention reservoirs with or without an outlet structure to one of the conveyance systems.
- 5.15 Wherever possible, the existing, presently used conveyance systems should be improved and used. The development of larger reservoirs, where practical, may be the best solution. A satisfactory agreement with the Lower Tule River Irrigation District or a more inclusive Association would offer a long term solution to storm water disposal, groundwater recharge, regulation of channel flows, and the maintenance of structures and facilities.
- 5.16 One helpful way to increase time of concentration and reduce the peak flows in storm drain facilities is to design landscaping in developments so that it will detain storm water. This can help the City retain a comfortable factor of safety even if higher than anticipated density development occurs in an area.

- 5.17 Prior to the construction of any storm drain reservoirs that are retention-type facilities, the developer and/or City should perform percolation tests and run water balance calculations to determine final sizing. Final sizing shall be based on a 100 year/10 day storm if percolation is inadequate to allow a lesser criteria.
- 5.18 Detention type storm drain reservoirs should be equipped with suitable outlet structures to control reservoir water volumes and to control flows downstream of them.

APPENDIX A

FIGURE A

STORM DRAIN MASTER PLAN - 1990 THRU 2010
PRESENT AND PROJECTED DRAINAGE SYSTEMS

FIGURE B

CITY OF PORTERVILLE LAND USE
AND CIRCULATION ELEMENT MAP

FIGURE C

PORTERVILLE AREA TOPOGRAPHIC MAP,
INCLUDING SCS HYDROLOGIC CLASSIFICATIONS

FIGURE D

STORM DRAIN MASTER PLAN - HYDROLOGICAL MODELING BASE MAP
WITH PROPOSED FACILITIES

MAPS IN INSERT AT BACK OF BOOK

APPENDIX B
LETTERS AND MEMORANDUMS

10/4/89

Meeting with Robert Gauger, Pioneer Water Company
C.W. Roberts & P. Gaston

Gauger would like to abandon the pipeline which goes west on Henderson Avenue from the vicinity of North Main Street, however, no entity seems to want to assume the liability for the conduit.

There is a by-pass and gate structure at Fourth and Garden to divert water to the ditch which runs down the east side of Fourth, next to the RR tracks to the Slough.

Gauger says the Slough needs to be maintained soon, much growth and debris will severely limit capacity.

Porterville Slough Ditch gets water from the Slough in the vicinity of Conley, near Kessing.

There is a dam in the vicinity of Morton and Crestview.

Gauger says the Ditch can accommodate 20 cfs max. and 16 cfs usually. He indicated he'd be willing to consider a detention basin which could return water to the ditch when capacity was available. The Ditch has been put into a conduit from Henderson and North Main northward to the Pioneer spill at John's Drive where there is an 8 to 10 foot standpipe from there the water remaining in the ditch travels to Canal #4 which is controlled by the Lower Tule River Irrigation District.

Gauger allowed as how he'd be willing to accept up to the capacity of the ditch, or conduit (4-5 cfs) if proper regulation and quality were assured.

10/3/89

Meeting with Roger Robb, Lower Tule River Irrigation District
C.W.Roberts & P.Gaston

Poplar Ditch diverts from the Tule River at the AT&SF RR crossing, an overflow structure is located opposite 3rd Place.

Mr. Robb recalled discussing a detention/retention basin south of the Ditch and west of Jaye street with the City. He thought he could recommend to his board the concept approval of delivering water from that area (Enterprise Zone drainage) to the Ditch if the quality and quantity were regulated.

There is an unofficial agreement with the owner, Carl Dennis, of a depressed (ponding) area south of Roberts, west of Indiana to use the area for percolation of water from the Ditch.

There is an overflow area (low) opposite Salisbury Street and north of Highway 190 known as Adair Brown's property (formerly Faure') fed by a conduit after the Ditch crosses the highway from south to north and continues to flow toward the west.

The maximum flow in the Ditch is 25cfs, mol, in the vicinity of Jaye Street.

There is an agreement with the County for accepting some water in the vicinity of Strathmore.

As discussed with Bill, the general philosophy seems to be that reasonable requests will be considered. The District doesn't want more water that they can handle and they don't want water of poor quality. They would prefer to see the ground water recharged with excess run-off.

PORTERVILLE IRRIGATION DISTRICT

P.O. BOX 1248, PORTERVILLE, CA 93258

(209) 784-0716

OCTOBER 26, 1989



N. Pierre Gaston
Roberts Engineering
P.O. Box 908
Porterville, CA 93258

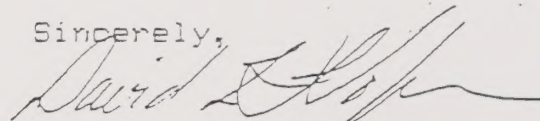
re: Storm Water Discharges

Dear Mr. Gaston:

Your letter of September 22, 1989 concerning possible proposed storm water discharges to Hubbs and Miner Ditch and Porter Slough Ditch indicated that you wish to discuss the possible criteria and constraints on said discharges. Please be advised that the Porterville Irrigation District, as agent for both companies, is not disposed to allow additional discharges of any sort to these ditches. Current uncontrolled releases to these facilities, coupled with flood control releases from Success Reservoir are already in excess of the capacity of the facilities.

Should you require any further information you may contact me at the office of the Porterville Irrigation District.

Sincerely,


David L. Hoffman
Manager

APPENDIX C
CONSTRUCTION COSTS, SUMMARIES AND FEES

1989 CONSTRUCTION COSTS

(INCLUDING MANHOLES AT 300 FOOT SPACING
AND TRENCH RESURFACING)

<u>PIPE SIZE</u>	<u>INSTALLED COST</u> <u>PER FOOT</u>
18 INCH	\$ 50.00
21 INCH	\$ 54.00
24 INCH	\$ 59.00
27 INCH	\$ 66.00
30 INCH	\$ 76.00
33 INCH	\$ 85.00
36 INCH	\$ 94.00
42 INCH	\$ 108.00
48 INCH	\$ 120.00
54 INCH	\$ 130.00
60 INCH	\$ 145.00
66 INCH	\$ 158.00
72 INCH	\$ 172.00
78 INCH	\$ 196.00
84 INCH	\$ 220.00
96 INCH	\$ 244.00

GRADED DITCH CONSTRUCTION COST = \$ 4.00 PER FOOT

FLAT LAND DETENTION AND RETENTION
RESERVOIRS AVERAGE COST (INCLUDING
LAND ACQUISITION COST AND INLET
AND OUTLET COSTS) = \$ 2.50 PER CUBIC YARD

HILLSIDE DAM CONSTRUCTION
APPROXIMATE COST (INCLUDING
FLOOD SPILLWAY AND OUTLET COST) = \$ 1.25 PER CUBIC YARD

ENGINEERING NEWS RECORD
CONSTRUCTION COST INDEX
OCTOBER 5, 1989 = 4645.85 (TYPICAL)

OCTOBER 4, 1993 = 5263.54

CITY OF PORTERVILLE
CONSTRUCTION COST SUMMARY
BASED ON 1993 COSTS*
FOR MAJOR STORM DRAIN SYSTEM
IMPROVEMENTS

16-Oct-94
SDCOSTSUM

WATERSHED STORM DRAIN SYSTEM	RETENTION/ DETENTION RESR/VR COSTS	NEW OR PARALLEL PIPE COSTS	TOTAL SYSTEM COSTS	BUDGETED 1995 AMOUNT	BUDGETED 2000 AMOUNT	BUDGETED 2005 AMOUNT	BUDGETED 2010. AMOUNT
=====	=====	=====	=====	=====	=====	=====	=====
AIRPORT	\$1,229,039	\$4,082,718	\$5,311,757	\$1,788,829	\$1,174,309	\$1,174,309	\$1,174,309
EAST PORTERVILLE	\$576,933	\$521,577	\$1,098,510	\$490,977	\$202,511	\$202,511	\$202,511
GRAND		\$1,283,950	\$1,283,950	\$320,987	\$320,987	\$320,987	\$320,987
HENDERSON	\$1,038,342	\$532,850	\$1,571,192	\$782,176	\$263,005	\$263,005	\$263,005
HILLCREST	\$206,553	\$564,483	\$771,037	\$270,217	\$166,940	\$166,940	\$166,940
LINDAVISTA	\$422,246	\$1,075,126	\$1,497,373	\$532,686	\$321,562	\$321,562	\$321,562
MAIN	\$109,766	\$171,989	\$281,755	\$111,601	\$56,718	\$56,718	\$56,718
MORTON		\$303,655	\$303,655	\$75,914	\$75,914	\$75,914	\$75,914
NORTH GRAND	\$367,272	\$796,023	\$1,163,295	\$428,551	\$244,915	\$244,915	\$244,915
OAK - PORTER SLOUGH WEST	\$111,182	\$398,544	\$509,727	\$169,125	\$113,534	\$113,534	\$113,534
OLIVE WEST		\$675,857	\$675,857	\$168,964	\$168,964	\$168,964	\$168,964
PORTER SLOUGH		\$589,568	\$589,568	\$147,392	\$147,392	\$147,392	\$147,392
RIVER RANCH	\$105,516	\$449,235	\$554,750	\$178,256	\$125,498	\$125,498	\$125,498
ROCKY HILL	\$613,628	\$381,900	\$995,529	\$478,993	\$172,179	\$172,179	\$172,179
TULE RIVER SOUTH	\$433,488	\$883,802	\$1,317,290	\$491,881	\$275,137	\$275,137	\$275,137
UNION		\$124,970	\$124,970	\$31,242	\$31,242	\$31,242	\$31,242
ZALUD	\$822,284	\$1,908,140	\$2,730,423	\$990,962	\$579,820	\$579,820	\$579,820
=====	=====	=====	=====	=====	=====	=====	=====
	\$6,036,250	\$14,744,388	\$20,780,638	\$7,458,754	\$4,440,628	\$4,440,628	\$4,440,628
=====	=====	=====	=====	=====	=====	=====	=====

1995 BUDGETED AMOUNT APPORTIONS 1/2 OF THE POND COSTS FOR THE SYSTEM FOR LAND ACQUISITION COSTS

* THESE COSTS ARE BASED ON THE ENGINEERING NEWS RECORD CONSTRUCTION COST INDEX RATIO
OF OCTOBER 1989 TO OCTOBER 1993 AS SPECIFIED IN THE 1989 REPORT.

n= 0.013 for pipes over 48" dia as recommended by the Bureau of Public Roads
n= 0.013 for pipes under 48" dia using plastic with an n of .009

CITY OF PORTERVILLE
STORAGE RESERVOIR STATISTICS

18-Oct-94
STRMRES

LOCATION	RESER'VE ID	100 Yr Storm Vol (af)	STATUS	MOD '94	EXISTING VOLUME (af)	NET UPGRADE (cu yds)	NEW & UPGRADE COST
=====	=====	=====	=====	=====	=====	=====	=====
NEWDOME @ AIRPORT (E)	29	68.86	NEW	*		111,094	\$314,674
SCRANTON @ RD 220 (SW)	30	200.09	NEW	*		322,812	\$914,365
LINDA VISTA @ BEVERLY (NE)	24	92.40	NEW			149,072	\$422,246
VETERANS PARK	06	237.57	UPGRADE	*	30.00	334,880	\$948,546
HAYES FIELD	08	53.40	FIXED	*	25.77		
ZALUD PARK (COMBINED)	09	104.39	FIXED	*	17.58		
LEWIS POND (co)	12	273.76	UPGRADE	*	127.32	236,257	\$669,197
HENDERSON @ PARK (co)	14	40.12	NEW	*	6.62	54,047	\$153,087
WESTFIELD @ VILLA (co)	15	18.28	UPGRADE	*	13.24	8,131	\$23,032
STONEBRIDGE @ HWY 65	19	14.61	NEW	*		23,571	\$66,764
JAYE @ WORTH (NW) WAL-MART	28	50.55	UPGRADE	*	33.00	28,314	\$80,199
NORTHWEST OF 190/65	54	27.22	NEW	*		43,915	\$124,389
NORTHEAST OF 190/65	55	57.93	UPGRADE	*	30.00	45,060	\$127,634
RR @ TULE RIVER/MAIN ST.	56	22.60	UPGRADE	*	8.00	23,555	\$66,719
PLANO @ TULE RIVER	57	7.56	NEW	*		12,197	\$34,547
K T I P (co)	17	66.29	NO CNG.	*	70.37		
CASTLE @ PROSPECT (co)	18	46.86	NEW	*		75,601	\$214,139
LOMBARDI @ CASTLE (NW) (co)	20	33.51	NEW	*		54,063	\$153,133
NORTH of ZANTE	25	24.02	NEW			38,752	\$109,766
MULBERRY @ Fr Kern Cnl (co)	23	54.33	UPGRADE	*	30.00	39,252	\$111,182
FORD ESTATES	50	3.85	NEW	*		6,211	\$17,594
RIVER RANCH	51	19.79	UPGRADE	*	2.50	27,895	\$79,011
LEWIS PROPERTY	52	17.95	UPGRADE	*	16.00	3,146	\$8,911
DOYLE SCHOOL	53	45.20	NEW	*		72,923	\$206,553
ROBY @ CONNER	26	85.15	UPGRADE	*	33.72	82,974	\$235,023
E.PTRVL X4 (co)	48	32.21	NEW			51,965	\$147,192
E.PTRVL X5 (co)	49	42.61	NEW			68,744	\$194,718
ROCKY HILL #1	10	49.92	NO CNG.		49.92		
ROCKY HILL #2 (co)	13	16.96	UPGRADE		12.38	7,389	\$20,930
ROCKY HILL #X1 (co)	41	7.41	NEW			11,955	\$33,862
ROCKY HILL #X2 (co)	42	11.05	NEW			17,827	\$50,496
ROCKY HILL #X3 (co)	43	31.34	NEW			50,562	\$143,216
ROCKY HILL #XK (co)	44	22.09	NO CNG.		22.09		
ROCKY HILL #XA (co)	45	16.40	NO CNG.		16.40		
ROCKY HILL #XC (co)	46	36.83	NEW			59,419	\$168,305
ROCKY HILL #XDJ (co)	47	43.07	NEW			69,486	\$196,820
=====	=====	=====	=====	=====	=====	=====	=====
		1,976.18			544.91	2,131,068	\$6,036,250
=====	=====	=====	=====	=====	=====	=====	=====
LOCATION	RESER'VE ID	100 Yr Storm Vol (af)	STATUS	MOD '94	EXISTING VOLUME (af)	NET UPGRADE (cu yds)	NEW & UPGRADE COST

STORM DRAINAGE ACREAGE FEES
CITY OF PORTERVILLE

18-Oct-94
PVSDAF

EXHIBIT A

STORM DRAINAGE FEES - COST PER ACRE

ZONING	RUNOFF COEFF.	JULY '89 ADOPTED \$/ACRE	JULY '89 UNDEV. ACRES	JULY '91 RUNOFF ACRES	JULY '91 COST* DISTRIB.	JULY '91 ADOPTED \$/ACRE	OCT '93 UNDEV. ACRES	OCT '93 RUNOFF ACRES	OCT '93 COST* DISTRIB.	OCT '93 PROPOSED \$/ACRE !	JULY '94 PROPOSED \$/ACRE !	JULY '94 ADOPTED \$/ACRE
R-1	0.30	\$1,184	3888	1166.4	\$10,201,911	\$2,624	3618	1085.4	\$12,097,889	\$3,344	\$3,436	\$3,042
R-2	0.40	\$1,993	218	87.2	\$762,694	\$3,499	213	85.2	\$949,641	\$4,458	\$4,581	\$4,057
R-3&R-4	0.60	\$1,993	64	38.4	\$335,865	\$5,248	59	35.4	\$394,569	\$6,686	\$6,871	\$6,025
ALL C,M,& INSTITUT.	0.80	\$3,161	998	798.4	\$6,983,201	\$6,997	823	658.4	\$7,338,539	\$8,917	\$9,161	\$8,114

TOTAL
UNDEVELOPED ACRES 5168
RUNOFF ACRES 2090.4
COST TO BE RECOVERED \$18,283,671
(SEE CONSTRUCTION COST SUMMARY)

* ACRES x RUNOFF COEFFICIENT / TOTAL RUNOFF ACRES x (COST TO BE RECOVERED-STORM DRAIN FUND)
!= \$/ACRE != COST DISTRIBUTION / UNDEVELOPED ACRES

ENGINEERING NEWS RECORD CONSTRUCTION COST INDEX (ENRCCI) INCR SINCE 10-93, 5407.89/5263.54 = 1.027
BETWEEN OCTOBER 1989 AND OCTOBER 1993, ENR INCREASED 5263.54/4645.85 = 1.133
RUNOFF ACRES = (AREA) ACRES X RUNOFF COEFFICIENT [64 x.6=38.4]

STORM DRAINAGE FEES
CITY OF PORTERVILLE

Revised 2/12/2001

EXHIBIT A

The complete 1994 *Update of City of Porterville Storm Drain Master Plan* has not been adopted as of this date. Soon after the report was completed, the City Council adopted the map containing the additional drainage reservoirs proposed, so that proper credit could be given to developers for construction of master plan facilities. Staff took time before adoption to study the actual cost of storm drain facilities before a fee increase of approximately 11% was presented to City Council for approval. Further study found that the actual cost of constructing facilities only required a 5% increase in fees. Therefore staff decided to wait and adopt the updated master plan with the updated water and sewer master plans so the fees for all three master plans could be considered at the same time. The recommended fees are listed below.

PROPOSED STORM DRAINAGE FEES - DOLLARS PER ACRE

	Effective 07-01-00	Effective 02-20-01
1. Single Family (R-1) & Hillside Residential	3,509	3,684
2. Duplex (R-2)	4,680	4,914
3. Multiple Family (R-3 & R-4)	7,019	7,370
4. Commercial, Industrial & Institutional	9,358	9,826

1994 UPDATE

STORM DRAIN RESERVOIR PERCOLATION ANALYSIS
CITY OF PORTERVILLE

18-Oct-94
RESPERC4

LOCATION	RES. ID	DEPTH OF RES. (ft)	1 DAY		*FACTORED		PERC RATE (min/in)	**EFFECT PERC. (in/day)	10 DAY PERC VOLUME Vol(af)	***NEEDED	
			100 Yr STORM Vol(af)	100 Yr STORM Area(ac)	10 DAY 100 Yr STORM Vol(af)	10 DAY 100 Yr STORM Vol(af)				ADD'L VOLUME Vol(af)	OR AMT. TO BE DRAINED Vol(af)
NEWCOMB @ AIRPORT (E)	29	8.0	68.9	8.6	141.0	22.7	T	21.1	151.7		
SCRANTON @ RD 220 (SW)	30	12.0	200.1	16.7	409.7	9.6	T	50.0	694.8		
LINDA VISTA @ BEVERLY (NE)	24	12.0	92.4	7.7	189.2	30.0	A	16.0	102.7	86.5	
VETERANS PARK	06	6.3	237.6	37.7	486.5	10.9	T	44.0	1383.8		
WESTFIELD @ VILLA (co)	15	8.6	18.3	2.1	37.4	18.0	T	26.7	47.2		
STONEBRIDGE @ HWY 65	19	5.0	14.6	2.9	29.9	7.4	T	64.9	157.9		
JAYE @ WORTH (NW)	28	4.5	50.6	11.2	103.5	30.0	A	16.0	149.8		
NORTHWEST OF 190/65	54	5.0	27.2	5.4	55.7	30.0	A	16.0	72.6		
NORTHEAST OF 190/65	55	5.0	57.9	11.6	118.6	30.0	A	16.0	154.5		
RR @ TULE RIVER/MAIN ST.	56	6.0	22.6	3.8	46.3	30.0	A	16.0	50.2		
PLANO @ TULE RIVER	57	6.5	7.6	1.2	15.5	30.0	A	16.0	15.5		
K T I P (co)	17	10.0	66.3	6.6	135.7	28.0	T	17.1	94.7	41.0	
LOMBARDI @ CASTLE (NW) (co)	20	3.5	33.5	9.6	68.6	31.0	T	15.5	123.5		
NORTH of ZANTE	25	9.0	24.0	2.7	49.2	45.0	A	10.7	23.7	25.5	1.4
MULBERRY @ Fr Kern Cnl (co)	23	8.0	54.3	6.8	111.2	13.0	T	36.9	209.0		
FORD ESTATES	50	5.0	3.9	0.8	7.9	30.0	A	16.0	10.3		
RIVER RANCH	51	6.0	19.8	3.3	40.5	30.0	A	16.0	44.0		
LEWIS PROPERTY	52	6.0	18.0	3.0	36.8	30.0	A	16.0	39.9		
DOYLE SCHOOL	53	6.0	45.2	7.5	92.6	30.0	A	16.0	100.4		
ROBY @ CONNER	26	12.8	85.2	6.7	174.4	31.0	T	15.5	85.8	88.5	3.4
E.PTRVL X4 (co)	48	10.0	32.2	3.2	66.0	90.0	A	5.3	14.3	51.6	19.4
E.PTRVL X5 (co)	49	10.0	42.6	4.3	87.2	90.0	A	5.3	18.9	68.3	25.7
ROCKY HILL #1	10	3.5	49.9	14.3	102.2	90.0	A	5.3	63.4	38.8	
ROCKY HILL #2 (co)	13	2.0	17.0	8.5	34.7	90.0	A	5.3	37.7		
ROCKY HILL #X1 (co)	41	2.0	7.4	3.7	15.2	90.0	A	5.3	16.5		
ROCKY HILL #X2 (co)	42	3.0	11.1	3.7	22.6	90.0	A	5.3	16.4	6.3	
ROCKY HILL #X3 (co)	43	6.0	31.3	5.2	64.2	90.0	A	5.3	23.2	41.0	9.6
ROCKY HILL #XK (co)	44	6.0	22.1	3.7	45.2	90.0	A	5.3	16.4	28.9	6.8
ROCKY HILL #XA (co)	45	6.0	16.4	2.7	33.6	90.0	A	5.3	12.1	21.4	5.0
ROCKY HILL #XC (co)	46	9.0	36.8	4.1	75.4	20.8	T	23.1	78.7		
ROCKY HILL #XDJ (co)	47	7.5	43.1	5.7	88.2	25.0	T	19.2	91.9		

T--TESTED

A--ASSUMED

* A VERY CONSERVATIVE ESTIMATE BASED UPON A RATIO OF PRECIPITATION WITH NO ADJUSTMENT FOR BASIN (WATERSHED) PERCOLATION.

** BASED UPON A PERCOLATION RATE OF 33.33% OF THAT INDICATED BY TEST OR ASSUMPTION.

*** ADDITIONAL VOLUME NOT NEEDED IF RESERVOIR IS DRAINED DOWN DURING 10 DAY STORM

NOTE: PRIOR TO THE CONSTRUCTION OF ANY STORM DRAIN RESERVOIRS THAT ARE RETENTION TYPE FACILITIES PERCOLATION TESTS SHALL BE RUN AND AN ANALYSIS SHALL BE PERFORMED TO DETERMINE IF A SIZE INCREASE IS NECESSARY TO ALLOW FOR STORAGE SO THAT ENOUGH TIME IS PROVIDED TO PERCOLATE THE ADDED VOLUME OF WATER WHICH WOULD BE CREATED BY A 10 DAY 100 YR STORM.

CITY OF PORTERVILLE
STORM DRAIN MASTER PLAN
SUMMARY INFORMATION

AIRPORT STORM DRAIN SYSTEM

18-Oct-94

Using a Manning formula n= 0.013

PIPE REACH	DESIGN Q (CFS)	EXST'G YR	PIPE (IN)	NEW OR PIPE (IN)	LENGTH (FT)	COST per FT	TOTAL COST	CONSTRUCTION TYPE
Ar01	2.85	10		18	200	\$56.65	\$11,330	NEW CONST.
Ar02	7.02	10		21	660	\$61.18	\$40,380	NEW CONST.
Ar03	18.62	10		30	1050	\$86.11	\$90,413	NEW CONST.
Ar04a	18.62	10		30	2100	\$86.11	\$180,827	NEW CONST.
Ar05	18.62	10		30	350	\$86.11	\$30,138	NEW CONST.
Ar06a	19.61	10		33	1650	\$96.31	\$158,903	NEW CONST.
Ar07a	22.63	10		36	1300	\$106.50	\$138,453	NEW CONST.
Ar08	26.04	10		36	100	\$106.50	\$10,650	NEW CONST.
Ar09	46.36	10		27	100	\$74.78	\$7,478	NEW CONST.
Ar10	54.78	10		54	1550	\$147.29	\$228,300	NEW CONST.
Ar11a	62.14	10		54	1250	\$147.29	\$184,113	NEW CONST.
Ar12a	94.57	10		54	1500	\$147.29	\$220,935	NEW CONST.
Ar13	94.57	10		54	700	\$147.29	\$103,103	NEW CONST.
Ar14	94.57	10		54	100	\$147.29	\$14,729	NEW CONST.
Ar15a	30.13	10		33	2640	\$96.31	\$254,245	NEW CONST.
Ar16	49.47	10		42	1250	\$122.36	\$152,955	NEW CONST.
Ar17a	21.14	10		33	800	\$96.31	\$77,044	NEW CONST.
Ar18a	37.36	10		42	1320	\$122.36	\$161,520	NEW CONST.
Ar19	37.36	10		42	800	\$122.36	\$97,891	NEW CONST.
Ar20a	49.64	10		48	1200	\$135.96	\$163,152	NEW CONST.
Ar25	148.11	10		66	1320	\$179.01	\$236,298	NEW CONST.
Ar25a	160.65	10		66	900	\$179.01	\$161,113	NEW CONST.
Ar26a	215.53	10		66	1750	\$179.01	\$313,275	NEW CONST.
Ar27	298.29	10		66	100	\$179.01	\$17,901	NEW CONST.
Ar28	15.74	10		33	1320	\$96.31	\$127,123	NEW CONST.
Ar29	24.31	10		33	800	\$96.31	\$77,044	NEW CONST.
Ar30	34.44	10		36	520	\$106.50	\$55,381	NEW CONST.
Ar31a	42.15	10		48	1320	\$135.96	\$179,467	NEW CONST.
Ar32a	11.30	10		27	1500	\$74.78	\$112,167	NEW CONST.
Ar34a	72.98	10		60	2000	\$164.29	\$328,570	NEW CONST.
Ar36a	76.28	10		60	720	\$164.29	\$118,285	NEW CONST.
Ar37a	39.19	10		DITCH	2200	\$4.53	\$9,966	NEW CONST.
Ar38	42.54	10		DITCH	1320	\$4.53	\$5,980	NEW CONST.
Ar39a	68.18	10		DITCH	1950	\$4.53	\$8,834	NEW CONST.
Ar40a	79.29	10		DITCH	1050	\$4.53	\$4,757	NEW CONST.

\$4,082,718

CITY OF PORTERVILLE
STORM DRAIN MASTER PLAN
SUMMARY INFORMATION

EAST PORTERVILLE STORM DRAIN SYSTEM

Using a Manning formula n= 0.013

PIPE REACH	DESIGN Q (CFS)	EXST'G YR PIPE (IN)	NEW OR // PIPE (IN)	LENGTH (FT)	COST per FT	TOTAL COST	CONSTRUCTION TYPE
Yr01	11.28	2	18	1320	\$56.65	\$74,778	NEW CONST.
Yr02	24.83	2	27	1150	\$74.78	\$85,995	NEW CONST.
Yr03	30.55	2	30	1400	\$86.11	\$120,551	NEW CONST.
Yr04	44.81	2	33	850	\$96.31	\$81,859	NEW CONST.
Yr05	47.09	2	33	660	\$96.31	\$63,561	NEW CONST.
Yr06	51.99	2	33	660	\$96.31	\$63,561	NEW CONST.
Yr07	1.87	2	18	200	\$56.65	\$11,330	NEW CONST.
Yr08	54.73	2	30	100	\$86.11	\$8,611	NEW CONST.
Yr09	1.00	2	18	200	\$56.65	\$11,330	NEW CONST.
						\$521,577	

CITY OF PORTERVILLE
STORM DRAIN MASTER PLAN
SUMMARY INFORMATION

GRAND STORM DRAIN SYSTEM

Using a Manning formula n= 0.013

PIPE REACH	DESIGN Q (CFS)	EXST'G YR	PIPE (IN)	NEW OR PIPE (IN)	LENGTH (FT)	COST per FT	TOTAL COST	CONSTRUCTION TYPE
Gr21	15.31	2		54	260	\$147.29	\$38,295	NEW CONST.*
Gr22	15.31	2		48	1681	\$135.96	\$228,549	NEW CONST.*
Gr23	15.92	2		48	1255	\$135.96	\$170,630	NEW CONST.*
Gr24	70.36	10		54	405	\$147.29	\$59,652	NEW CONST.*
Gr25	70.68	10		54	920	\$147.29	\$135,507	NEW CONST.*
Gr26	72.15	10		54	961	\$147.29	\$141,546	NEW CONST.*
Gr27	72.85	10		54	203	\$147.29	\$29,900	NEW CONST.*
Gr28	73.70	10		54	1519	\$147.29	\$223,734	NEW CONST.*
Gr29	76.16	10		54	1600	\$147.29	\$235,664	NEW CONST.*
Gr30	76.16	10		54	139	\$147.29	\$20,473	NEW CONST.*

\$1,283,950

* THESE PIPES HAVE BEEN DESIGNED BY THE CITY OF PORTERVILLE FOR THIS SYSTEM

CITY OF PORTERVILLE
STORM DRAIN MASTER PLAN
SUMMARY INFORMATION

HENDERSON STORM DRAIN SYSTEM

Using a Manning formula n= 0.013

PIPE REACH	DESIGN Q (CFS)	EXST'G YR PIPE (IN)	NEW OR // PIPE (IN)	LENGTH (FT)	COST per FT	TOTAL COST	CONSTRUCTION TYPE
Vr01	1.97	2	18	300	\$56.65	\$16,995	NEW CONST.
Vr02	18.43	10	24	700	\$66.85	\$46,793	NEW CONST.
Vr03	5.04	2	18	450	\$56.65	\$25,493	NEW CONST.
Vr04	0.22	2	18	1320	\$56.65	\$74,778	NEW CONST.
Vr05	0.16	2	18	170	\$56.65	\$9,631	NEW CONST.
Vr06	0.49	2	18	500	\$56.65	\$28,325	NEW CONST.
Vr07	0.19	2	18	370	\$56.65	\$20,961	NEW CONST.
Vr08	2.20	2	18	350	\$56.65	\$19,828	NEW CONST.
Vr10	2.47	2	18	50	\$56.65	\$2,833	NEW CONST.
Vr11	1.00	2	18	900	\$56.65	\$50,985	NEW CONST.
Hr01	3.93	10	18	1500	\$56.65	\$84,975	NEW CONST.
Hr02	2.25	2	18	1320	\$56.65	\$74,778	NEW CONST.
Hr03	3.33	2	18	1000	\$56.65	\$56,650	NEW CONST.
Hr04	0.88	10	18	350	\$56.65	\$19,828	NEW CONST.
						\$532,850	

CITY OF PORTERVILLE
STORM DRAIN MASTER PLAN
SUMMARY INFORMATION

HILLCREST STORM DRAIN SYSTEM

Using a Manning formula $n = 0.013$

PIPE REACH	DESIGN Q (CFS)	EXST'G YR	PIPE (IN)	NEW OR // PIPE (IN)	LENGTH (FT)	COST per FT	TOTAL COST	CONSTRUCTION TYPE
Tr01	7.87	2		18	330	\$56.65	\$18,695	NEW CONST.
Tr02	7.87	2		18	800	\$56.65	\$45,320	NEW CONST.
Tr03	10.42	2		21	660	\$61.18	\$40,380	NEW CONST.
Tr04	2.00	2		18	800	\$56.65	\$45,320	NEW CONST.
Tr25	12.37	2		21	850	\$61.18	\$52,005	NEW CONST.
Tr26	12.79	2		24	660	\$66.85	\$44,119	NEW CONST.
Tr27	12.87	2		24	660	\$66.85	\$44,119	NEW CONST.
Tr19	3.37	2		18	220	\$56.65	\$12,463	NEW CONST.
Tr17	3.62	2		18	440	\$56.65	\$24,926	NEW CONST.
Tr18	3.62	2		18	860	\$56.65	\$48,719	NEW CONST.
Tr20	5.32	2		18	220	\$56.65	\$12,463	NEW CONST.
Tr21	5.32	2		18	760	\$56.65	\$43,054	NEW CONST.
Tr22	1.12	2		18	660	\$56.65	\$37,389	NEW CONST.
Tr23	1.13	2		18	660	\$56.65	\$37,389	NEW CONST.
Tr28	19.38	2		24	300	\$66.85	\$20,054	NEW CONST.
Tr29	19.65	2		24	400	\$66.85	\$26,739	NEW CONST.
Tr30	3.62	2		18	200	\$56.65	\$11,330	NEW CONST.
							\$564,483	

CITY OF PORTERVILLE
STORM DRAIN MASTER PLAN
SUMMARY INFORMATION

LINDA VISTA STORM DRAIN SYSTEM

Using a Manning formula n= 0.013

PIPE REACH	DESIGN Q (CFS)	EXST'G YR	PIPE (IN)	NEW OR // PIPE (IN)	LENGTH (FT)	COST per FT	TOTAL COST	CONSTRUCTION TYPE
Dr01	1.21	2		18	200	\$56.65	\$11,330	NEW CONST.
Dr02	2.82	2		18	1320	\$56.65	\$74,778	NEW CONST.
Dr04	4.07	2		18	660	\$56.65	\$57,389	NEW CONST.
Dr05	6.91	2		21	1100	\$61.18	\$67,300	NEW CONST.
Dr06	6.93	2		21	200	\$61.18	\$12,236	NEW CONST.
Dr07	3.53	2		18	1000	\$56.65	\$56,650	NEW CONST.
Dr08	7.04	2		18	950	\$56.65	\$53,818	NEW CONST.
Dr09	7.04	2		18	1000	\$56.65	\$56,650	NEW CONST.
Dr10	4.57	2		18	1100	\$56.65	\$62,315	NEW CONST.
Dr11	14.20	2		18	350	\$56.65	\$19,828	NEW CONST.
Dr12	14.30	2		18	350	\$56.65	\$19,828	NEW CONST.
Dr13	55.73	10		33	500	\$96.31	\$48,153	NEW CONST.
Dr14	62.68	10		42	2000	\$122.36	\$244,728	NEW CONST.
Dr15	30.86	10		21	1400	\$61.18	\$85,655	NEW CONST.
Dr16	39.78	10		27	670	\$74.78	\$50,101	NEW CONST.
Dr17	44.51	10		33	100	\$96.31	\$9,631	NEW CONST.
Dr18	47.48	10		30	650	\$86.11	\$55,970	NEW CONST.
Dr19	121.69	10		48	800	\$135.96	\$108,768	NEW CONST.
							\$1,075,126	

CITY OF PORTERVILLE
STORM DRAIN MASTER PLAN
SUMMARY INFORMATION

MAIN STORM DRAIN SYSTEM

Using a Manning formula n= 0.013

PIPE REACH	DESIGN Q (CFS)	EXST'G YR PIPE (IN)	NEW OR // PIPE (IN)	LENGTH (FT)	COST per FT	TOTAL COST	CONSTRUCTION TYPE
Nr01	4.65	2	18	900	\$56.65	\$50,985	NEW CONST.
Nr02	5.21	2	21	1400	\$61.18	\$85,655	NEW CONST.
Nr03	6.49	2	21	300	\$61.18	\$18,355	NEW CONST.
Nr04	4.47	2	18	300	\$56.65	\$16,995	NEW CONST.
						\$171,989	

CITY OF PORTERVILLE
STORM DRAIN MASTER PLAN
SUMMARY INFORMATION

MORTON STORM DRAIN SYSTEM

Using a Manning formula n= 0.013

PIPE REACH	DESIGN Q (CFS)	EXST'G YR PIPE (IN)	NEW OR PIPE (IN)	// PIPE (IN)	LENGTH (FT)	COST per FT	TOTAL COST	CONSTRUCTION TYPE
Er03	12.86	10		27	1710	\$74.78	\$127,870	NEW CONST.
Er05	24.21	10	30	24	1350	\$66.85	\$90,243	PARALLEL PIPE
Er07	26.97	10	36	18	660	\$56.65	\$37,389	PARALLEL PIPE
Er09	0.86	10		18	850	\$56.65	\$48,153	NEW CONST.
							\$303,655	

CITY OF PORTERVILLE
STORM DRAIN MASTER PLAN
SUMMARY INFORMATION

NORTH GRAND STORM DRAIN SYSTEM

Using a Manning formula $n = 0.013$

PIPE REACH	DESIGN Q (CFS)	EXST'G YR	PIPE (IN)	NEW OR // PIPE (IN)	LENGTH (FT)	COST per FT	TOTAL COST	CONSTRUCTION TYPE
Rr01	6.07	2		18	700	\$56.65	\$39,655	NEW CONST.
Rr02	28.17	10		30	1000	\$86.11	\$86,108	NEW CONST.
Rr03	28.17	10		30	700	\$86.11	\$60,276	NEW CONST.
Rr04	29.46	10		30	750	\$86.11	\$64,581	NEW CONST.
Rr05	30.80	10		30	50	\$86.11	\$4,305	NEW CONST.
Rr06	34.50	10		36	650	\$106.50	\$69,226	NEW CONST.
Rr07	41.72	10		36	100	\$106.50	\$10,650	NEW CONST.
Kr01	7.52	10		21	660	\$61.18	\$40,380	NEW CONST.
Kr02	5.75	2		24	660	\$66.85	\$44,119	NEW CONST.
Kr09	0.75	2		18	660	\$56.65	\$37,389	NEW CONST.
Kr18	1.16	2		18	1350	\$56.65	\$76,478	NEW CONST.
Kr19	1.49	2		18	1800	\$56.65	\$101,970	NEW CONST.
Kr20	2.85	2		18	100	\$56.65	\$5,665	NEW CONST.
Cr01a	2.58	2		18	1320	\$56.65	\$74,778	NEW CONST.
Cr02	5.65	2		18	1320	\$56.65	\$74,778	NEW CONST.
Cr03	8.09	2		18	100	\$56.65	\$5,665	NEW CONST.
							\$796,023	

CITY OF PORTERVILLE
STORM DRAIN MASTER PLAN
SUMMARY INFORMATION

OAK & PORTER SLOUGH WEST STORM DRAIN SYSTEMS

Using a Manning formula $n = 0.013$

PIPE REACH	DESIGN Q (CFS)	EXIST'G YR PIPE (IN)	NEW OR // PIPE (IN)	LENGTH (FT)	COST per FT	TOTAL COST	CONSTRUCTION TYPE
Or01	1.51	2	18	150	\$56.65	\$8,498	NEW CONST.
Or02	3.07	2	18	250	\$56.65	\$14,163	NEW CONST.
Or24	4.94	2	21	300	\$61.18	\$18,355	NEW CONST.
Or25	5.90	2	21	1320	\$61.18	\$80,760	NEW CONST.
Or26	5.88	2	21	1320	\$61.18	\$80,760	NEW CONST.
Or28	6.04	2	21	500	\$61.18	\$30,591	NEW CONST.
Or38	3.21	2	18	820	\$56.65	\$46,453	NEW CONST.
Ur21	0.18	2	18	2100	\$56.65	\$118,965	NEW CONST.
						\$398,544	

CITY OF PORTERVILLE
STORM DRAIN MASTER PLAN
SUMMARY INFORMATION

OLIVE WEST STORM DRAIN SYSTEM

Using a Manning formula $n = 0.013$

PIPE REACH	DESIGN Q (CFS)	EXST'G YR PIPE	EXST'G (IN)	NEW OR // PIPE (IN)	LENGTH (FT)	COST per FT	TOTAL COST	CONSTRUCTION TYPE
Wr10	32.68	10	36	30	900	\$86.11	\$77,497	PARALLEL PIPE
Wr11	35.92	10	36	36	660	\$106.50	\$70,291	PARALLEL PIPE
Wr12	40.92	10	36	42	660	\$122.36	\$80,760	PARALLEL PIPE
Wr13	45.80	10	36	42	2350	\$122.36	\$287,555	PARALLEL PIPE
Wr14	45.80	10	42	36	1500	\$106.50	\$159,753	PARALLEL PIPE
							\$675,857	

CITY OF PORTERVILLE
STORM DRAIN MASTER PLAN
SUMMARY INFORMATION

PORTER SLOUGH STORM DRAIN SYSTEM

Using a Manning formula $n = 0.013$

PIPE REACH	DESIGN Q (CFS)	EXST'G YR	EXST'G PIPE (IN)	NEW OR // PIPE (IN)	LENGTH (FT)	COST per FT	TOTAL COST	CONSTRUCTION TYPE
Pr01	2.77	10	12	18	800	\$56.65	\$45,320	PARALLEL PIPE
Pr02	0.93	10	12	18	920	\$56.65	\$52,118	PARALLEL PIPE
Pr03	4.23	10	12	18	1300	\$56.65	\$73,645	PARALLEL PIPE
Pr04	2.72	10	12	18	600	\$56.65	\$33,990	PARALLEL PIPE
Pr05	8.33	10	15	21	660	\$61.18	\$40,380	PARALLEL PIPE
Pr06	9.06	10	15	21	660	\$61.18	\$40,380	PARALLEL PIPE
Pr07	10.36	10	15	21	700	\$61.18	\$42,827	PARALLEL PIPE
Pr08	20.40	10	18	30	660	\$86.11	\$56,831	PARALLEL PIPE
Pr09	28.12	10	18	30	1320	\$86.11	\$113,663	PARALLEL PIPE
Pr10	28.27	10	18	30	550	\$86.11	\$47,359	PARALLEL PIPE
Mr07a	29.61	10		30	100	\$86.11	\$8,611	NEW CONST.
Mr07b	30.01	10		30	400	\$86.11	\$34,443	NEW CONST.
							\$589,568	

CITY OF PORTERVILLE
STORM DRAIN MASTER PLAN
SUMMARY INFORMATION

RIVER RANCH STORM DRAIN SYSTEM

Using a Manning formula n= 0.013

PIPE REACH	DESIGN Q (CFS)	EXST'G YR	PIPE (IN)	NEW OR // PIPE (IN)	LENGTH (FT)	COST per FT	TOTAL COST	CONSTRUCTION TYPE
Sr04a	2.20	2		18	450	\$56.65	\$25,495	NEW CONST.
Sr05a	2.79	2		18	400	\$56.65	\$22,660	NEW CONST.
Sr05b	2.79	2		18	200	\$56.65	\$11,330	NEW CONST.
Sr07a	0.16	2		18	540	\$56.65	\$30,591	NEW CONST.
Sr28	0.28	2		18	750	\$56.65	\$42,488	NEW CONST.
Sr09	0.16	2		18	1000	\$56.65	\$56,650	NEW CONST.
Sr20	0.40	2		18	1000	\$56.65	\$56,650	NEW CONST.
Sr21	0.96	2		18	400	\$56.65	\$22,660	NEW CONST.
Sr22	0.12	2		18	150	\$56.65	\$8,498	NEW CONST.
Sr23	0.35	2		18	1320	\$56.65	\$74,778	NEW CONST.
Sr24	0.49	2		18	660	\$56.65	\$37,389	NEW CONST.
Sr25	0.67	2		18	660	\$56.65	\$37,389	NEW CONST.
Sr26	0.81	2		18	200	\$56.65	\$11,330	NEW CONST.
Sr27	0.48	2		18	200	\$56.65	\$11,330	NEW CONST.
							\$449,235	

CITY OF PORTERVILLE
STORM DRAIN MASTER PLAN
SUMMARY INFORMATION

ROCKY HILL STORM DRAIN SYSTEM

Using a Manning formula n= 0.013

PIPE REACH	DESIGN Q (CFS)	EXST'G YR	PIPE (IN)	NEW OR // PIPE (IN)	LENGTH (FT)	COST per FT	TOTAL COST	CONSTRUCTION TYPE
1r04	12.97	2		DITCH	1320	\$4.53	\$5,982	NEW CONST.
1r05	61.83	2		DITCH	660	\$4.53	\$2,991	NEW CONST.
1r06	1.00	2		18	1320	\$56.65	\$74,778	NEW CONST.
1r07	4.56	2		18	200	\$56.65	\$11,330	NEW CONST.
1r09	1.76	2		18	100	\$56.65	\$5,665	NEW CONST.
1r10	6.98	2		18	50	\$56.65	\$2,833	NEW CONST.
1r11	1.00	2		18	600	\$56.65	\$33,990	NEW CONST.
1r12	2.28	2		18	900	\$56.65	\$50,985	NEW CONST.
1r13	4.61	2		18	250	\$56.65	\$14,163	NEW CONST.
1r14	4.61	2		18	660	\$56.65	\$37,389	NEW CONST.
1r15	6.73	2		18	200	\$56.65	\$11,330	NEW CONST.
1r16	6.73	2		24	650	\$66.85	\$43,451	NEW CONST.
1r17	8.67	2	21	21	350	\$61.18	\$21,414	PARALLEL PIPE
1r18	9.22	2	21	18	50	\$56.65	\$2,833	PARALLEL PIPE
1r19	4.20	2		18	1000	\$56.65	\$56,650	NEW CONST.
1r21	12.90	2		21	100	\$61.18	\$6,118	NEW CONST.
							\$381,900	

CITY OF PORTERVILLE
STORM DRAIN MASTER PLAN
SUMMARY INFORMATION

TULE RIVER SOUTH STORM DRAIN SYSTEM

Using a Manning formula $n = 0.013$

PIPE REACH	DESIGN Q (CFS)	EXT'G YR	EXIST'G PIPE (IN)	NEW OR // PIPE (IN)	LENGTH (FT)	COST per FT	TOTAL COST	CONSTRUCTION TYPE
Jr26	7.57	10		21	1000	\$61.18	\$61,182	NEW CONST.
Jr27a	11.63	10		24	660	\$66.85	\$44,119	NEW CONST.
Jr28a	7.62	10		24	450	\$66.85	\$30,081	NEW CONST.
Jr29	28.98	10		30	1320	\$86.11	\$113,663	NEW CONST.
Jr30	13.98	10		27	1320	\$74.78	\$98,707	NEW CONST.
Jr31	14.16	10		27	550	\$74.78	\$41,128	NEW CONST.
Jr12a	0.77	2		18	1100	\$56.65	\$62,315	NEW CONST.
Jr14a	3.14	2		18	230	\$56.65	\$13,030	NEW CONST.
Jr15a	3.16	2		18	30	\$56.65	\$1,700	NEW CONST.
Qr03	6.14	10	18	18	110	\$56.65	\$6,232	PARALLEL PIPE
Qr04	12.42	10	24	18	205	\$56.65	\$11,613	PARALLEL PIPE
Qr07	28.27	10	36	21	825	\$61.18	\$50,475	PARALLEL PIPE
Qr08	34.63	10	36	27	775	\$74.78	\$57,953	PARALLEL PIPE
Qr09	37.52	10	36	33	75	\$96.31	\$7,223	PARALLEL PIPE
Qr14	19.56	10		27	900	\$74.78	\$67,300	NEW CONST.
Qr16	0.73	2		18	1000	\$56.65	\$56,650	NEW CONST.
Qr20	2.84	10		18	1100	\$56.65	\$62,315	NEW CONST.
Qr21	0.31	2		18	600	\$56.65	\$33,990	NEW CONST.
Qr25	4.98	10		18	180	\$56.65	\$10,197	NEW CONST.
Qr27	7.28	10		18	250	\$56.65	\$14,163	NEW CONST.
Qr28	7.28	10		21	650	\$61.18	\$39,768	NEW CONST.
							\$883,802	

CITY OF PORTERVILLE
STORM DRAIN MASTER PLAN
SUMMARY INFORMATION

UNION STORM DRAIN SYSTEM

Using a Manning formula n= 0.013

PIPE REACH	DESIGN Q (CFS)	EXST'G YR	PIPE (IN)	NEW OR // PIPE (IN)	LENGTH (FT)	COST per FT	TOTAL COST	CONSTRUCTION TYPE
Ir11	5.45	10	18	18	350	\$56.65	\$19,828	PARALLEL PIPE
Ir12	8.76	10	18	18	1100	\$56.65	\$62,315	PARALLEL PIPE
Ir13	10.63	10	18	21	700	\$61.18	\$42,827	PARALLEL PIPE
							\$124,970	

CITY OF PORTERVILLE
STORM DRAIN MASTER PLAN
SUMMARY INFORMATION

ZALUD STORM DRAIN SYSTEM

Using a Manning formula n= 0.015

PIPE REACH	DESIGN Q (CFS)	EXST'G YR	PIPE (IN)	NEW OR // PIPE (IN)	LENGTH (FT)	COST per FT	TOTAL COST	CONSTRUCTION TYPE
Lr01	68.96	2		42	1320	\$122.36	\$161,520	NEW CONST.
Lr02	71.27	2		48	660	\$135.96	\$89,734	NEW CONST.
Lr03	71.73	2		42	1320	\$122.36	\$161,520	NEW CONST.
Lr04	72.57	2		48	660	\$135.96	\$89,734	NEW CONST.
Lr05	6.05	2		18	700	\$56.65	\$39,655	NEW CONST.
Lr06	77.91	2		42	300	\$122.36	\$36,709	NEW CONST.
Lr07	15.71	2		21	1320	\$61.18	\$80,760	NEW CONST.
Lr08	18.81	2		27	1000	\$74.78	\$74,778	NEW CONST.
Lr09	18.81	2		24	500	\$66.85	\$33,424	NEW CONST.
9r01	1.66	2		18	460	\$56.65	\$26,059	NEW CONST.
9r02	1.66	2		18	300	\$56.65	\$16,995	NEW CONST.
9r03	0.69	2		18	50	\$56.65	\$2,833	NEW CONST.
9r04	2.08	2		18	80	\$56.65	\$4,532	NEW CONST.
3r01	9.61	10		27	212	\$74.78	\$15,853	NEW CONST.
3r02	1.63	2		18	100	\$56.65	\$5,665	NEW CONST.
2r01	1.98	2		18	1320	\$56.65	\$74,778	NEW CONST.
2r02	3.34	2		18	330	\$56.65	\$18,695	NEW CONST.
2r03	3.34	2		18	330	\$56.65	\$18,695	NEW CONST.
2r06	1.51	2		18	660	\$56.65	\$37,389	NEW CONST.
4p04	1.00	2		18	330	\$56.65	\$18,695	NEW CONST.
4p05	2.63	2		18	1320	\$56.65	\$74,778	NEW CONST.
4p06	29.38	10		42	717	\$122.36	\$87,735	NEW CONST.
Lr11	1.90	2		18	1320	\$56.65	\$74,778	NEW CONST.
Lr12	4.43	2		18	800	\$56.65	\$45,320	NEW CONST.
4r06	2.66	2		18	1320	\$56.65	\$74,778	NEW CONST.
4r07	5.90	10		24	50	\$66.85	\$3,342	NEW CONST.
7r01	7.49	10		27	400	\$74.78	\$29,911	NEW CONST.
Zp07	33.54	10	24	36	1115	\$106.50	\$118,750	PARALLEL PIPE
Zp08	51.36	10	42	33	484	\$96.31	\$46,612	PARALLEL PIPE
Zp11	61.68	10	42	42	1325	\$122.36	\$162,132	PARALLEL PIPE
Zp13	13.41	10	12	21	780	\$61.18	\$47,722	PARALLEL PIPE
Zp14	13.41	10		33	300	\$96.31	\$28,892	NEW CONST.
Zp15	61.68	10	42	48	110	\$136	\$14,956	PARALLEL PIPE
Zp16	98.75	10	42	60	100	164.285	\$16,429	PARALLEL PIPE
Zr03	4.47	10	12	18	250	56.65	14162.5	PARALLEL PIPE
Zr05	13.10	10		27	800	\$75	\$59,822	NEW CONST.
							\$1,908,140	

APPENDIX D

ORDINANCE 1440

AN ORDINANCE OF THE CITY COUNCIL OF THE
CITY OF PORTERVILLE ESTABLISHING A
STORM DRAINAGE FACILITIES FEE FOR ALL NEW
DEVELOPMENT WITHIN THE CITY OF PORTERVILLE

The City Council of the City of Porterville does hereby ordain as follows:

Section 19A-40 of the Porterville Municipal Code is amended to read as follows:

PURPOSE:

In order to implement the goals and objectives of the Storm Drain Master Plan of the City of Porterville, and to provide needed storm drainage facilities for new development in the planning area, certain public storm drain facilities must be constructed. The City Council has determined that a development impact fee is needed in order to finance these public improvements and to pay for the development's fair share of the construction costs of these improvements. In establishing the fee described below, the City Council has found the fee to be consistent with its General Plan and, pursuant to Government Code Section 65913.2, has considered the effects of the fee with respect to the City's housing needs as established in the Housing Element of the General Plan.

ACREAGE FEE:

An acreage fee is hereby established on land division, issuance of all building permits for development in the City, or upon creation of any additional runoff to the City's storm drain system to pay for storm drainage improvements. The City Council shall, by Council Resolution, set forth the specific amount of the fee, describe the benefit and impact area on which the development fee is imposed, list the specific public improvements to be financed, describe the estimated cost of these facilities, describe the reasonable relationship between this fee and the various types of new developments and set forth time for payment. As described in the fee resolution, this development fee shall be paid by each developer prior to issuance of building permits or upon creation of any additional runoff to the City's storm drain system. On an annual basis, this fee shall be adjusted by the Director of Community Development and Services Department in accordance with the "ENGINEERING NEWS RECORD CONSTRUCTION COST INDEX" publication.

LIMITED USE OF FEES:

The revenues raised by payment of this fee shall be placed in a separate and special account and such revenues, along with any interest earnings on that account, shall be used solely to: (a) pay for the City's future construction of storm drainage facilities described in the resolution enacted with this ordinance, or to reimburse the City for those described or listed facilities constructed by the City with funds advanced by the City from other sources; or (b) reimburse developers who have been required or permitted as set forth below, to install such listed facilities which are oversized with supplemental size, length, or capacity.

DEVELOPER CONSTRUCTION OF FACILITIES:

Whenever a developer is required, as a condition of approval of a development permit, to construct a public facility described in a resolution adopted pursuant to this section, and when such construction is necessary to ensure efficient and timely construction of the facilities network, a reimbursement agreement with the developer and a credit against the fee, which would otherwise be charged pursuant to this ordinance on the development project, shall be offered. The reimbursement amount (credit against fee) shall not exceed the actual cost of the construction of the facility by the developer. In the event the actual construction cost of the facility exceeds the fee required of the development project, the City shall enter a reimbursement agreement for the cost in excess of the fee required for the project, to be paid from the special account established pursuant to this ordinance.

This ordinance shall be in full force and effect ghirty days from and after its publication and passage.

CITY OF PORTERVILLE

By ORIGINAL SIGNED
Theodore G. Ensslin, Mayor

ATTEST:

ORIGINAL SIGNED
C. G. Huffaker, City Clerk

STATE OF CALIFORNIA)
)SS
COUNTY OF TULARE)

I, C.G. Huffaker, the duly appointed City Clerk of the City of Porterville, do hereby certify and declare that the foregoing ordinance is a full, true and correct copy of Ordinance No. 1440, passed and adopted by the Council of the City of Porterville at a regular meeting held on the 21st day of August, 1990, and that said ordinance has been duly published pursuant to law, and that by the terms and provisions of the Charter of the City of Porterville, said ordinance become effective on the 20th day of September, 1990, and that said ordinance is now in full force and effect.

That said ordinance was introduced by Council and the same was duly passed and adopted by the following vote:

COUNCILMEN	PRUITT	LOK	LEAVITT	GIFFORD	ENSSLIN
AYES	X	X	X	X	X
NOES					
ABSENT					
ABSTAIN					

C. G. HUFFAKER, City Clerk

ORIGINAL SIGNED
Georgia Hawley, Deputy City Clerk

APPENDIX "E"

RESOLUTION 95-90

RESOLUTION NO. 95-90

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF PORTERVILLE
ESTABLISHING A STORM DRAINAGE FACILITIES FEE FOR ALL
DEVELOPMENTS WITHIN THE CITY OF PORTERVILLE

WHEREAS, the City Council of the City of Porterville has adopted Ordinance No. 1440 creating and establishing the authority for imposing and charging a storm drainage facilities improvement fee; and,

WHEREAS, the Storm Drain Master Plan 1989, identified the impacts of contemplated development, within the General Plan boundaries, on existing public facilities in the planning area, along with which an analysis of the need for new public facilities and improvements required by new development was conducted and said study set forth the relationship between new development, the needed facilities, and the estimated costs of those improvements. and,

WHEREAS, the City Council finds as follows:

- A. The purpose of this fee is to finance storm drainage facilities to keep demand on the existing facilities from increasing and accommodate increased demand brought about by new development within the planning area;
- B. The fees collected pursuant to this resolution shall be used to finance only the public facilities described in the Storm Drain Master Plan;
- C. After considering the study and analysis entitled "Storm Drain Master Plan", and the testimony received at this public hearing, the Council approves said study and incorporates such herein, and further finds that the new development in the planning area will generate additional demand for storm drainage facilities within the impacted area;
- D. There is a need in this described impact area for storm drainage facilities which have not been constructed or have been constructed, but new development has not contributed its fair share towards these facility costs and said facilities have been called for in or are consistent with the City's Circulation Element of its General Plan;
- E. The facts and evidence presented establish that there is a reasonable relationship between the need for the described public facilities and the impacts of the types of development described in Paragraph 3, below, for which the corresponding fee is charged, and, also, there is a reasonable relationship between the fee's use and the type of development for which the fee is charged, as these reasonable relationships or nexus are in more detail described in the study referred to above;
- F. The cost estimates set forth in the Storm Drain Master Plan are reasonable cost estimates for constructing these facilities, and the fees in attached Exhibit "A", expected to be generated by new development, will not exceed the total of these costs.

NOW, THEREFORE, it is hereby resolved by the City Council of the City of Porterville that:

1. Definitions:

- (a) "New Development" shall mean construction of residential improvements, original

construction of commercial, industrial or other non-residential improvements, or the addition of floor space to existing improvements.

(b) "Exempted Development" shall mean that the City Council may exempt low-income housing or senior housing projects, all or specific types of sizes of residential additions upon the developer entering into an agreement with the City which will adequately guarantee the development of said housing to the satisfaction of the City Council.

2. A storm drainage facilities improvement fee shall be paid prior to the issuance of a building permit by all non-exempted new development in the planning area. The City Engineer shall determine if the development lies within this planning area, the type of development and the corresponding fee to be charged in accordance with this resolution.
3. For new development, the fee shall be as established in the adopted fee schedule, attached hereto as Exhibit "A", and incorporated herein by this reference as if set forth in full herein, which schedule shall be adjusted annually by the Director of Community Development and Services Department in accordance with the "ENGINEERING NEWS RECORD CONSTRUCTION COSTS INDEX" publication.
4. Use of Fee. The fee shall be solely used to pay: (1) for described public facilities to be constructed by the City; (2) for reimbursing the City for the development's fair share of those storm drainage facilities already constructed by the City; or, (3) to reimburse other developers who have constructed public facilities, where those facilities were beyond that needed to mitigate the impacts of the developer's project or projects.
5. Fee Review. Commencing in fiscal year 1995, and at least once every five years thereafter, the City Engineer shall review the estimated cost of the described capital improvements, the continued need for those improvements and the reasonable relationship between such need and the impacts of the various types of development pending or anticipated and for which this fee is charged. The City Engineer shall report his findings to the City Council at a noticed public hearing and recommend any adjustment to this fee or other action as may be needed.

PASSED AND ADOPTED this 7TH day of AUGUST, 1990.

CITY OF PORTERVILLE

By ORIGINAL SIGNED

Theodore G. Ensslin, Mayor

ATTEST:

ORIGINAL SIGNED

C. G. Huffaker, City Clerk

STATE OF CALIFORNIA)

)SS

COUNTY OF TULARE)

I, C.G. Huffaker, the duly appointed City Clerk of the City of Porterville, do hereby certify and declare that the foregoing is a full, true and correct copy of a resolution duly and regularly passed and adopted at a regular meeting of the Porterville City Council called and held on the 7th day of August, 1990.

That said resolution was duly passed and adopted by the following vote:

AYES: COUNCILMEN: Lok, Gifford, Ensslin

NOES: COUNCILMEN: None

ABSENT: COUNCILMEN: Pruitt, Leavitt

C. G. HUFFAKER, City Clerk

Georgia Hawley, Deputy City Clerk



Oversized Map or Foldout not scanned.

Item may be viewed at the
Institute of Governmental Studies Library, UC Berkeley.



U.C. BERKELEY LIBRARIES



C124926591

